About the book; Indus - Vedic Genetics Indus Valley - Vedic Civilization The book explores the background of Indus city civilization in the light of most exciting discovery of the decade, the DNA by Watson and Crick 1953. The Indus Valley gene technology was much more advance. It reveals the fact that life has evolved from the single cell and DNA. It also reveals the fact that transgenic plants and animals can be developed. The rich biodiversity zones in India and Africa is its confirmative evidence. The excessive exploitation of nature and nuclear weapon is curse for the earth. The Indus Valley catastrophe is its confirmation. The DNA is Light of Life with merits and demerits from generation to generation. The transgenic animals and plants can be developed for the domestic comfort, but it may create havoc also.The Genetic symbols explore Indus Valley - Vedic Civilization.To understands the life and DNA on the earth, the Vedas can guide further. The book is monumental in its contents.



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Indus - Vedic Genetics

Indus Valley -Vedic Civilization

Genetic symbols explored Indus -Vedic civilization



Tvaṣṭā- DNA the shaper of all creatures

Bound with a triple bond the Steer roars loudly: the mighty God hath entered into mortal's Ṛg.4-58-3

Dr. C.P. Trivedi

Assisted by Aseem Trivedi

Indus - Vedic Genetics

Indus Valley-Vedic Civilization

Dedication

Dedicated to

Ancient path making seers

Offer you to Yama most honeyed, and stand forth;
this homage to the former - born, the former, the path
making seers.

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Indus - Vedic Genetics

Indus-Vedic Civilization

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1 Preface

The subject matter of the Vedas and Indus Valley seals moves round the cosmic principles and life on the earth. It is interesting to know that the knowledge revealed on the seals is sovereign Science of the creation, under which the creation is working as a system. It is the product of long research in various fields as revealed by the figures on the seals in a sequence. The contemporary discoveries were in successive steps with repeated experiments. The established theories and principles have been engraved on the seals symbolically.

The electron microscopic models of DNA and the DNA micro bodies on the seals have encouraged into the depth of the symbols. The recent discovery of the Higgs; God particle and the discovery of single unified force by the successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böhm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter - non - local causes operate and similar particles at a space like distance or some how - instantaneously interconnected without the connection of any signal like light or electromagnetic waves. It has given the sufficient ground to decipher the seals.

In the past few hundred years the development of modern science has tried to explore the mystery of life on the earth in a systematic manner through experiments and their conclusive results.

It seems that evolution of the civilization and its destruction with time is a natural process on the earth. The excessive exploitation of the nature is the cause of destruction.

Now we know that the creation is a system, the great scientist Einstein has enlightened the world that the creation is working, under the laws of thermo dynamics.

In Einstein's equation $E = mc^2$ it means energy and mass can be converted in to each other, where E =Energy, m=Mass and c =Velocity of light.

Life has originated on the earth through a chemical synthetic process of evolution. The Ozone layer protects the life on the earth. The light energy is converted in to chemical energy through photosynthesis by the green plants, which is the source of carbon skeleton of the living-beings.

The DNA with four bases is main genetic material, which is

universally present in the living-beings. The system is working under the bio-geo-chemical cycles in nature through oxidation and reduction reactions. The time on the earth is related with the rotation of the sun at its axis. All these conclusions of modern science have been discussed in the Vedas also, and the same have been engraved on the seals symbolically.

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future age Ṛg.10-72 1

With the scientific interpretation of the Vedic metaphors, the decipherment of the Indus Valley seals is possible. For which India and Indian culture were awaiting since long.

It will also reveal the fact that once in the history Vedic culture flourished on the earth, without it such scientific work is not possible, it is also not possible that through meditation in the state of trance, such knowledge can be explored?

The Vedic concept starts that no body has created the creation. It has developed under space time and environmental condition.

Once only once, the heaven was made, once only once, the earth was formed. Once only Priśni's milk was shed; no second, after this, is born Rig-Veda 6-48-22

It has been expressed that the earth and the atmosphere have been

created once only, the *Priśni* is name of cow, who give all type of food. It is metaphor for food with photosynthesis and generation of chemical energy in plants, which feed the creation. Once the process of the creation has been started, it has maintained its continuity with evolution.

The creation has evolved from a fundamental energy from the universe. It has entered into the nucleus of the atom, and imparted the gravity to the atom.

A teacher and a subject expert professor can understand the importance of metaphors and riddles in day to day life to explain the knowledge in a simple way, so that the listener can grasp the knowledge in it. In the same fashion the Vedic texts and Indus Valley symbols move forward with their contemporary knowledge in the background. Accordingly any subject expert can grasp the meaning of the symbols.

The symbols on the potteries, beads, fiences and lockets exhibit that the common people were also acquainted with the principles of life and creation on the earth.

I feel great honour to acknowledge the assistance and support during the long period of 45 years of research and teaching in the field. I have been assisted by Department of Culture, Government

of India, University Grants Commission, New Delhi, Indian Institute of Advance Study, Shimla, department of Higher education, Govt. of M.P. and Archaeological Survey of India for facility to study the Indus Valley seals and tablets. I also feel obliged to CERN Scientists for the discovery of Higgs; God particle.

If there is any mistake or short coming in the book. I feel personally sorry for them, the suggestion if any will be my honour.

Dr. C. P. Trivedi
Vedic Research Institute
Ratlam 457001

15th August 2012
Independence Day
Indore

2. The Vedas; Sovereign Science of Creation

The Vedic seers with their great skill and labour have preserved their knowledge of the creation in the Vedic hymns, with their great devotion it has reached to us without break. It is our humble duty to interpret them in their proper way for the welfare of the society.

To interpret the Vedic hymns has been a great puzzle for the scholars. It is due the fact that the scholars were not acquainted with the Vedic scientific terminology and height of the Vedic science. The Vedic science in the Vedic hymns has its beginning, with discovery of single unified force of the creation, and modern discovery of Higgs; God particle. The same has been recognised in the modern science. . The insight in to these scriptures was to trace the mystery of origin of life on the earth. I have got the success in the scientific interpretation of Vedic language and I was very much surprise to trace all the modern principles and theories of creation in the Vedic texts. The Vedic hymns have been compiled by different *Ṛṣis*. The Vedic books are supposed to be the family books of the *Ṛṣis*. Looking to the depth of knowledge in the Vedic hymns it seems that the *Ṛṣis* of the hymns are the subject expert and head of the contemporary institutes of knowledge.

They have compiled the knowledge in the Vedic hymns keeping in view the students of their institutes. The metaphoric knowledge of the Vedic hymns moves around the basic truth and cosmic principles of the creation. The different subject experts have used their skill and wisdom with interdisciplinary approach, with different metaphors.

The *Ṛṣis* in the beginning of Vedic hymns have traced origin and evolution of the creation in a symbolic way from the fundamental energy. It is an essential part of the teaching to start the subject from its original source and gradually enter into the depth of the subject. Accordingly, the way of expression and knowledge is the same but with different metaphors, which lead to the depth of subject concern with praise prayers in the background, where words indicate the phenomenon at micro level. All *Ṛṣis* have used the same terminology of the deities with different metaphoric expressions, indicating the origin of solar system and sun as the main source of energy. The metaphors will look like 'headless and footless', without the concern knowledge with reference to the context. They have expressed the origin of the creation and nature from the fundamental energy. The generation of subatomic charged particles is the first step. Accordingly the solar system, from nebula came into the existence. The earth became the centre for the origin of life. The formation of the atmospheric layers, generation of ions

in the ionosphere and formation of ozone layer in the atmosphere are the essential factor for the origin of life.

The white visible-light with seven rays and formation of atom have constituted the base of creation. The generation of the magnetic energy in the atom and electromagnetic bond energy is the main cause of creation. The major elements of the creation are Carbon, Hydrogen and Oxygen. They have been termed, as *Mātriśva, Pavmān, and Indu* respectively. The nature feed the creation just like mother, under the nature and the natural forces.

The white visible light with Red wavelength has got the entry into the earth's atmosphere. With time carbon dioxide and water with the help of *Bhṛgu* converted the Red wavelength of light into the chemical-energy. The *Aśvins*- nucleotide pairs of DNA stimulated the process of evolution. The DNA with four bases is a universal genetic material**.** It is the base of living-beings with generation of life energy in the primitive prokaryotic cell.

They have summarise the thoughts, with focus on the single unified force as the creator, the atom is the building block of the creation, the DNA with four base is the building block of the living-beings, the life energy, the chemical energy of photosynthesis, the electromagnetic bond energy, with impact of Vāc- thought energy are playing, their role under the cosmic principles.

These thoughts have been woven in the metaphors, so as to teach

the students to acquaint them with phenomena and reactions in the nature at micro level. Just like a teacher teach to his students and examine them with asking answers of the riddles. It is the theme of the hymns, which move forward gradually into the depth of the subject concern.

As reflected in the book four *Ṛṣi Vamdeo son of Gotam* belongs to school of Biology, where he has traced the origin and evolution of the creation with reference to the origin of life and consciousness, and gone into the depth of biology, exploring the *Ṛbhu* as celestial race.

Similarly the *Ṛṣi* Dirghtamas belongs to the school of cosmic science. He has traced the origin and evolution of the creation with reference to the solar system and seasonal variation in the system, and how the system is working. He has described it in the book one from hymns 150 to 175.

The scientific facts, which have been revealed in the Vedic hymns, are in tune with the modern science at present. The higher Vedic knowledge, just like, the consciousness, the role of thought energy in life, the words and pictures are thought stimulators, they stimulate the language of DNA. These facts are waiting for the establishment in the modern science. Hence to interpret Vedic hymns one must have interdisciplinary approach with knowledge of the creation system.

Today with the discovery of electro- weak force by Abdus Salam, Sheldon Glashaw and Steven Weinsberg, three of the five forces in nature (electricity, magnetism and weak – interaction force) have been unified. The fourth force, the strong interaction force that binds the nucleus inside the atom is expected to be unified, as it is claimed today by some scientists.

The successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böehm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter "non – local" causes operate and similar particles at a space like distance or some how "instantaneously interconnected" without the connection of any signal like light or electromagnetic waves.

Now the scientists have realized the notion of 'Holistic paradigm' in the light of recent quantum theory, which leads to unbroken wholeness of the universe. The same echo is coming from the Vedic science, where the one unified force has been imagined metaphorically as *Yakṣa.*

A great monster' (yakṣa) in the midst of the creation (bhuvana) strode? (krānta) in penace on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk Atharvaveda 10-7-38

It has been expressed through the metaphor of the tree that all the components of the nature have evolved from the fundamental energy, and all are linked with him like the branches of a tree. He is in the middle of the creation. It indicates symbolically that all the components of the creation and nature are interconnected with fundamental energy, he is in the middle of the centre just like a *Yakṣa.*

Now the CERN Scientists with great devotion have discovered the Higgs; God particle. It has explored that an invisible **field** lying across the universe give particles their mass, allowing them to clump together to form stars and planets. In a similar fashion, the Vedic Scientists have traced the same. The creation came into the existence from eternal indestructible cosmic fundamental energy under the laws of thermodynamics.

The modern discovery of Higgs; God particle shows that we have touched the height of Vedic civilization; from where the Vedic Science begins. The most important is the decipherment of Indus Valley symbols,

The charged particles with their opposite charges bind together to produce atoms, atoms consists of subatomic units-electron, proton and neutron. The electrons are extremely light having cloud like density of mass energy with a negative electric charge, protons are

much larger in mass than electron and have a positive charge, neutron have a mass energy equal to that of proton and are electrically neutral. Although other types of sub atomic particles have also been identified, but the properties of atoms and their ability to react chemically can be explained on the basis of these three elementary particles, which constitute the base of the whole nature.

In an atom positively charged protons and neutrons constitute the nucleus, around which vibrating clouds of negatively charged electrons move in elliptical orbits, due to the vibratory movements and spin of electrons, magnetic energy is generated. The magnetic energy, with the electrostatic force of the nucleus produces the electromagnetic energy, which binds the atoms of similar nature. The atoms of different elements can produce diatomic molecules, even poly atomic complex molecules and chains of thousand of atoms like RNA and DNA may have produced. Which are the products of chemical interactions of the outermost electrons, to yield chemical bond or a covalent bond, when two atoms share electrons or ionic bond, when electrons are transferred from the atom to atom. It is the electromagnetic energy, which initiate the formation of bonds. Through these bonds the electromagnetic energy has maintained its continuity in atoms, molecules, substances and living-beings. It has been explained metaphorically through both the father and both the son.

Both their father are also their son; both the chief are also the meanest (Kaniṣṭha) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son metaphorically. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kaniṣṭha)*.

Now we know the fact that the electromagnetic energy bond energy is responsible for the synthesis and degradation of the matter in the nature.

During life the three energies, shows their impact in orderly sequence under cosmic principles and remain unaffected, it has been expressed by three with long tresses show in ordered season

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure. Ṛg. 1-164-44

The synthesis and disintegration in the living cell body is

controlled by the **electromagnetic bond energy,** during the life it synthesizes the cellular body and the same disintegrate the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence under cosmic principles, it has been expressed.

The experiences of the seers have been compiled in the Vedas, looking to the probable ecological, natural disaster, or nuclear threat. Where, the Ṛgveda is the first, and other Vedas have taken their shape with time.

Accordingly with my knowledge of the modern science I have devoted my services for the interpretation of the Vedic hymns. The Vedic knowledge is vis-à-vis modern science and more advance than the modern science.

We can extract much more for the global cooperation and world

peace as indicated in the *Vasudhaiv Kutumbakam*- the whole world is our family. It can guide the common people about the aim of life and their duty on the earth, towards the conservation of the nature, and the existence of life on the earth. The available records till today, shows that the earth is only planet in the cosmos, which has life on its surface.

The European scholars have done a great service of India with extensive work on the Indian culture and ancient Vedic texts. It has established India as the centre of world heritage, but they were unable to interpret the language of the Vedic hymns and the pictographic script of Indus Valley seals. It has given the wrong message that Aryan came from a remote place in India?

It is only due to the wrong notion that the Vedas are revelation of God, and seers have heard the hymns during the meditation in the state of trance. It has placed the Vedas in the list of religious superstitions. The western scholars were unable to decode the Vedic language, and considered the Vedic hymns as 'shepherd's song'. It has devalued the Vedic traditions and pushed India in dark tunnel of religious fundamentalism. Otherwise the Ṛgveda has been included in the list of world heritage by UNESCO, and can solve the problems of man kind on the earth.

The interpretation of Vedic language shows that the Vedas are books of Science, and the Vedic Science symbols and metaphors

have been engraved on the seals.

The seals were used for demonstration and teaching to the students with their literary text in Vedic hymns. The Vedic Science is in the background for the development of well planned city architecture of Harappa and Mohenjo - daro.

It has generated a quest to decipher the Vedic language. The seeds of quest were sown in my early child hood, when I have decided at my own to take science as a subject at school, but simultaneously visiting the temple of lord Mahakal at Ujjain with my mother regularly. It was a contradictory in respect of science and a matter of joke for my fellow students. It has generated a quest first time to search the scientific facts behind India's cultural heritage. With time, with lord Mahakal's blessings I have entered in to the field of science as an Environmental scientist, and gone in to the depth of various religious scriptures and Vedic texts

The Vedic Science and Indus Valley Science are not different. They are complimentary with each other. The Vedas can not be decoded without Indus Valley, and Indus Valley can not be understood without Vedas.

The Vedic hymns have been compiled after the contemporary discovery of the single unified force, and the modern God particle, which constitute the base of the creation. The same has been explained metaphorically.

The European scholars have interpreted that the white fair Aryan *Indra* has defeated the black demons without nose and pushed them southward, the black people of south India known as *Dravida* are the original in habitants of India converted by the *Aryans* in to the Vedic culture. In actual sense war and battle are symbolic metaphors to express the molecular reactions.

The *Indra* represents electricity and demons means obstacle, it has been expressed that black spots on the sun's surface are the obstacles in the luminosity of the sun, due to the charge of the *Indra*-electrostatic energy with the formation of electromagnetic energy the black spots have been destroyed.

The sun spots have been expressed metaphorically as nose less, without any projection.

The existence of the sun spots on the sun's surface in *Rohita sūkta* of the Atharvaveda have been expressed by white sons of black mother symbolically due to the solar flares coming out from the sun spots with the formation of electromagnetic energy.

The battle described between the *Aryan and the black demons-Dasyu* is a symbolic expression for the removal of the obstacle during the natural phenomena. The Aryan means well cultured-good system and the black demon represent the obstacle during the reaction.

In the same fashion the essence of the creation has been described as the four horned buffalo, where four horns are symbolic expression for the four dimensional structure of the atom, where the three fundamental particles- electron, proton, neutron generates the magnetic energy, due to the spinning of the vibratory electrons around the nucleus. It is the base or essence of the creation. The essence has been termed as *Ghṛta*-clarified butter, it means the essence of the buffalo milk is ghee, in the same fashion the four dimensional structure of the Atom has the essence of the creation.

Further the structure of the DNA has been expressed through the four horns four bases with two head- two strips and three legs represents triplet code of three bases known as genetic code Ṛg. 4-58

In the funeral hymns it has been said that *Yama's* two brindled dogs with four eyes watch the path of man. *The Yama* represents chromosome with the information of life and death. It consist of DNA, the two strips of the DNA have been expressed symbolically through two dogs and the four eyes represents four bases of the DNA, which record the deeds of a person concern in its language code of base sequence. It has been expressed by saying that *Yama's* two brindled dogs with four eyes watch the path of man, which will have repercussions in the future birth. It means it is an indication towards the fact that DNA and its language code is immortal Ṛg.10-10

How the creation came in to the existence? The role of DNA at cellular level in the living-beings has been expressed through the pictographs on the tablets. The symbols on the seals and tablets are cytological models, with this the Vedic metaphors have been engraved for demonstration and teaching to the students.

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3. The Indus Valley Civilization

Introduction

The epoch making discoveries made by the Archaeological Survey of India have revealed to us that, in the third millennium B.C., a full-fledged civilization, already age - old and stereotyped, flourished on Indian soil based upon a highly developed urban economy and discipline.

The excavation carried out at Harappa and Mohen-jo-daro have pushed the antiquity of Indian civilization far back in to the past and enabled India to make an entry into, and claim an important place in the world, so far as the matter of advanced civilization is concern.

But the interpretation of the Vedic language and its correlation with Indus Valley civilization was hard to understand.

There was a question mark that the urban civilization and Indian rural culture are contradictory. It has been propounded that there is no hint, even in the earliest ancient Indian texts, that there had been a period of urbanization during the Bronze age of the greater Indus Valley and Balluchistan including the fertile plains of other states. The scholars were also unable to decipher the Indus script. As such

the Indus valley civilization and its habitants became a mystery.

The Indus Valley was sophisticated and technologically advanced urban culture. Most city dwellers appear to have been traders or artisans, who lived with others pursuing the same occupation in well-defined neighborhoods.

Materials from distant regions were used in the cities for constructing seals, beads and other objects. Among the artifacts discovered were beautiful glazed faience beads. Steatite seals have images of animals, people and other types of inscriptions, including the yet un-deciphered writing system of the Indus Valley Civilization.

The gold jewelry and anatomically detailed figurines in terracotta, bronze and steatite have been found at the excavation sites.

Many crafts "such as shell working, ceramics, and agate and glazed steatite bead making" were used in the making of necklaces, bangles, and other ornaments from all phases of Harappan sites and some of these crafts are still practiced in the subcontinent todayṀ

Archaeologists have discovered a massive, dredged canal and what they regard as a docking facility at the coastal city of Lothal in western India (Gujarat state). An extensive canal network, used for irrigation, has however also been discovered by H.-P. Frankfort.

There was an extensive maritime trade network operating between the Harappan and Mesopotamian civilizations as early as the middle Harappan Phase,

The Indus Valley was advanced civilization in all respect. The evidences show that the Indus Valley Science and technology was well developed. The well developed city architecture explores their financial prosperity and intellectual wisdom, which lead to industrialization, trades and the academic institutes with skilled human resource. The possibility of well developed education system to prepare skilled engineers, planners, architects, and businessman can not be ruled out. It constitutes the backbone of the advanced civilization.

The excavated seals, copper tablets, beads, gems and jewellery, and tradition of proto-dentistry are hoofs of their scientific achievements. As also the well developed canal system for irrigation of crops. The well planned city architecture with advanced sanitation system explores their scientific advancement.
The scientific study and analysis of engraved symbols on the seals reveals that the seals, tablets and mini button seals are the materials for demonstration and teaching at higher academic institutes with their literary evidences in the Vedas.

The Vedas are the oldest literary record of the human civilization on the earth. The Vedic knowledge is in the form of metaphors and riddles, where words are only coded indicators having vast ocean of knowledge in the background. The words are actually thought provoking instruments, which stimulate the thought related with the metaphor or riddle. In the same fashion the seals recovered at Harappa and Mohan-jo-daro having symbolic pictographs of Vedic metaphors and riddles, every figure and symbol has a significant importance.

The symbols can be explained and interpreted by the professor, teacher or the student, who has the knowledge of related phenomena. The seals can be used for demonstration and teaching, and the same seals can be used for the examination for the award of degree after completion of the course.

The seals can be used in multiple ways. As revealed in the Vedas. Because fundamental principles of creation and life are one and the same for all, after the knowledge of the fundamental principles, the student proceed in different directions as per his mentality and wisdom to acquire skill in a particular field.

EARLY HISTORY

Vedas are oldest literary record of human civilization on the Earth... In this reference it is important to note that it was only in 326 B.C. when Alexander the great made his raid in to the north western provinces of the subcontinent and with this the world came to know about the India and Indian culture other major events in the History of India was the discovery of ancient cities of the Indus civilization and excavation at *Harappa* and *Mohan-jo-daro* in the 1920s, with this the great history of Indian culture came in to light. Accordingly the Archaeologists and historians like Sir John Marshall and Sir William Jones who was a noted scholar and jurist of Calcutta High Court in 1786. They have worked on Indian culture and postulated that Sanskrit Language is more close to Latin, Greek and languages of north India, with this Sir William Jones established the fact that the languages of South India are distantly different from Sanskrit. The Rev. Robert Caldwell 1814 used the term Dravidian for People of south India.

A series of monumental work came out on *Race, Language and Culture*. There was much writing about *Aryans* Indo-European and the Harappan civilization and of its relationship to Egypt and especially Summer, even Sir John Marshal used the term "*Indo Sumerian Civilization*" They have linked the history of India to the other early centres of civilization in the light of the Biblical theory of creation. They have interpreted the Vedas with reference to the religion and philosophy of *Brāhamaṇa literature, Upaniṣads and*

Purāṇa, they have been compiled in the post Vedic era. The European scholars have compared them with the Bible and the Jend Avestā. Accordingly they have given the concept of Indo Aryan, Indo Iranian and the Indo European migration hypothesis.

The pictographs-- The pictographs of the Indus Valley been considered as the pictographic script. Accordingly to decipher the script many scholars have tried at their best, but the seals were undecipherable. The work of Arlene R.K. Zide his paper brief survey of Work to Date on the Indus Script published in the Journal of Tamil Studies 1970. Iravatham Mahadevan- Study of Indus Script through bi-lingual Parallels 1972, and work of B.M. Pande on Inscribed copper Tablets from Mohan-jo-Daro: A Preliminary analysis 1973

Asko Parpola has done extensive work on the grammatical analysis, the work of Allchin F.R., Gregory L. Possehl, Jonathan Mark Kenoyer and Halim on -Ancient cities of the Indus Valley civilization have given important clues to decipher the script in their own way.

Ute Frank-Vogt has documented the seals, amulets and other inscribed material about 2,371 objects, the available material may be more. There are about 3,700 more or less legible inscriptions. The mark on the potteries, amulets, beads and on the bones

The typical inscriptions are mostly no more than four or five characters in length, most of which (aside from the Dholavira "signboard") are exquisitely tiny; the longest on a single surface, which is less than 1 inch (2.54 cm) square, is 17 signs long;

Sproat, and Witzel (2004) argues that the Indus system did not encode language, but was instead similar to a variety of non-linguistic sign systems used extensively in the Near East and other societies. Others have claimed on occasion that the symbols were exclusively used for economic transactions.

Photos taken in the 1920s and 1930s of hundreds of lost or stolen inscriptions, the excavation reports of Marshall (1931) Mackay (1938, 1943), Wheeler (1947) reveal much more about Indus Valley

Sir John Marshal and Ernst Mackay have recovered about 800 seals of steatite and many copper plates are incised with a pictograph of a human or animal figure.

Types of the seals

The seals and sealing excavated at Indus valley are -

1. Large intaglio seals of steatite and terracotta are intended for making impressions.

2. The miniature seals or amulets of steatite, not intended for making impressions.

The seals and sealing of terracotta or faience made from mould with devices and engraves inscriptions in relief.

3. The miniature seals and tiny sealing of faience were probably carried about as amulets. The seals have engraved pictographs of animals and human figure with inscriptions above the animal. It has been hypothesised as quasipictographic script. Its sequence is from right to left and left to right.

Symbols on the seals

Scanning Electron Microscope analysis of the incising marks on the steatite tablets indicates the use of three different specialized bronze graving tools. Each tablet was first shaped from raw unfired steatite and then incised with the script. After incising, it was fired in a high temperature kiln that would have taken two or more days to reach the temperature of 1000 degrees Centigrade that is necessary to harden the steatite. On this group of tablets, the edge of the incision is very sharp and has no distinctive grooves. The sixteen three sided tablets with incised inscription on each face were found in the debris at one place.

The scientific study and analysis of engraved symbols on the seals reveals that the seals, tablets and mini button seals are the materials for demonstration and teaching at higher academic

institutes with their literary evidences in the Vedas.

The skills with which the seals have been prepared reveal its importance and use of scientific tools to engrave the symbols on the seal shows that each and every symbol on the seal has its importance.

The typical inscriptions are mostly no more than four or five characters in length, on some seals only on or two symbol or only figure of animal motif in different shape. Mostly the inscriptions start from U shaped symbol and end with U shape symbol.

The theme of the inscription is symbolism, where the symbol has vast ocean of knowledge in the background. Where a single symbol or figure of animal motif describe the whole story of the symbol. To describe the symbol, one must know the reference and context of the symbol with its purpose. Accordingly all the symbols can be deciphered in chronological order with story of concern symbol.

The different types and pattern of symbolism reveal the fact that they belongs to different Institutes, which indicate the purpose and aim of the Institute behind the seal symbol.

Mostly only one symbol is significant, keeping in mind the importance of particular symbol, the seals have been prepared. The related teacher or the student can grasp its meaning, and can

explain the symbols and text behind the symbol in chronological order.

The common purpose and aim of the seals, tablets and miniature button seals is demonstration, teaching and examination of the students of a particular institute. Where the teacher uses different metaphors to express the knowledge, and examine the students and their ability to grasp the symbol in right perspective.

Accordingly the seals can be classified into seals in groups for demonstration and teaching, and the individual seals are for the examination. Where each seal or symbol is complete in it self with difference in symbol and animal figure.

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4. Interpretation of Vedic Language

The major obstacle in the decipherment of the Harappa and Mohan - Jo - daro- seals is undecipherable Vedic language code. The key of the Vedic language code is in the modern science and on the same line the Indus Valley seals can be deciphered. The Decipherment of the Indus Valley Vedic culture seals can throw a new light on the Indus Valley Vedic culture. The phonetic vibrations of the Vedic hymns in the background of the pictographic symbols explore the knowledge hidden in the symbols. The authentic tradition of understanding the Vedic samhitas can be discerned to have been available at least as far back as the Nirukta of *Yāska*. The *Yāska* holds a prominent position among the commentators. He has given his commentary in *Nirukta*, he has used *Nighaṇṭu* for explanation of the words. The *Ṛgvedic* deities have been described in *the Sarvānukramaṇī* of *Kātyāyana,* It is an index to the *Ṛgvedic mantras*, *Nītimañjarī* another commentary provides an ide

a about the social customs and tendencies of *the Ṛgvedic* period.

The emphasis laid in *mimansa* text on the unbroken tradition of Vedic study, refers apparently only to the tradition of memorizing and reciting the Vedas. The language of the Vedas is a coded

language. By the time of *Yāska* the Vedic hymns had become significantly unintelligible and a number of views have been formulated in relation to their interpretation. In the 5th century B.C. Panini carefully records the principles of Vedic grammar. In the 14th century *Sāyaṇācārya* attempted the renaissance of the Vedic tradition, he takes it for granted that Vedic hymns are to be understood strictly in the context of Vedic ritual. In the 19th century the publication of Max müller's translation with *Sāyaṇa*'s commentary on the Ṛgveda samhitas has open a new vista as a modern attempt to understand Vedas. The resources of comparative philology, comparative mythology and religion and of comparative history have been employed by a host of scholars all over the world for more than a century to discover the true meaning of the Veda and its religion. But, the quest to understand the Vedic language remains as it is due to the ambiguity of the Vedic hymns to allow a diversity of interpretation so as to trace their significance. Nevertheless, unresolved controversies continue to exist and most of the difficult Vedic hymns have been considered unintelligible, because scholars were unable to draw any conclusion from them. There is no doubt that our understanding of the Vedic language has made a considerable progress, but there is no consensus among the scholars. There must be an organized effort for interpretation and propagation of the Vedas in its true sense with the help of modern knowledge. It is a

fact that without thorough knowledge of the creation, Vedic metaphors are hard to understand. With the development of the modern science and technology, we have touched the Vedic height up to some extent. Hence in the light of modern knowledge now it is possible to understand the Vedic hymns.

No ancient or modern lexicon has interpreted the Vedic hymns in terms of science, because it was unimaginable. The modern scientific theories and the principles have been discovered only during the last two century surprisingly they have been incorporated in the Vedic hymns. It suggests that now we are more near to the Vedic knowledge. The tragedy before modern scholars is that oriental scholars are not acquainted or unaware with the principles and theories of modern science, similarly the modern scientists are not acquainted or unaware with the Vedic literature and Sanskrit, so far as there knowledge of the Vedic literature and Sanskrit is concern.

The Vedic literature is in the form of metaphors and riddles, it indicates towards the phenomena of the nature and the natural reactions going on in the nature. With the knowledge of the modern science the indications can be understood. Hence for the interpretation of the indications one must know the Vedic

terminology in its proper way, because Vedic terminology with myths of mythology is a product of long history of climatic conditions. The Vedic deities, they actually represent either the component of nature or natural phenomena. The anthropomorphic nature of the deities and their figurative description with personification is a way of expression of the thoughts about the natural phenomena. Although without reference and the knowledge of the related phenomena the metaphors are hard to understand, where words are only the coded indicators. As such with an aim to decode the Vedic metaphors a scientific terminology of the Vedic deities has been prepared to interpret the Vedic hymns and metaphors in a chronological order with depth of the Vedic knowledge. In the same manner the riddles can also be solved, where words are only coded indicators and the unexplainable metaphors explore their true meaning.

The analysis of the metaphors reveals the fact that Vedic science was much more advanced than our modern science and we can extract much more for the welfare of the society. Because if we interpret the Vedic hymns scientifically in the light of modern science up to the level where we stand at present, than in a similar sequence we will get the answer of the theories about which we are still in dark. For example at present we do not know the exact

mechanism of origin of life on the earth and role of consciousness in the life, similarly we have no knowledge about the rebirth cycle, although we know about the role of DNA and biogeochemical cycles in the nature. It is worth to note that without having the clue of origin of life we can not satisfy the religious fundamentalism in the world only after tracing the origin of life on the earth. We can also trace than the aim of life on the earth under the cycle of rebirth and death as indicated in the Vedic hymns.

In the history, with the British rule in India the discovery of ancient India has taken its shape with Vedic literature in the background. It became the most consuming intellectual project to trace the history of ancient India. The Archaeologists, linguists, anthropologists, historians and philologists devoted their services to trace the background of uncivilized slave Indian culture with an aim to rule over India. The western scholars have considered the Vedas as religious scriptures and tried to trace history of the religious thoughts of the primitive society on the earth. They became most excited with the discovery of Sanskrita and its correlation with European languages. The linguists and comparative philology has further intensified the problem. It is all due to the misinterpretation of the Vedas in wrong direction. There is no history or religion in the Vedas. On the contrary, they reveal

the scientific truth of the creation for which the modern scientists are working in a systematic manner. They have no answers about many secrets of the creation. The unanswered problems can be solved with the help of Vedic knowledge and they can be tested scientifically.

With the scientific interpretation of the Vedic metaphors, the decipherment of the Indus Valley seals is possible. For which India and Indian culture were awaiting since long. It will give new dimension to the Indian culture in the world. It will also reveal the fact that once in the history Vedic culture flourished on the earth, without it such scientific work is not possible, it is also not possible that through meditation in the state of trance, such knowledge can be explored? It is this wrong notion, which has kept the Vedic texts in the category of religious scriptures. The Vedas have been preserved through a complicated and highly strenuous oral tradition. With the great skill and labour of the Vedic people, it has reached to us without break even after many thousand years. It is our humble duty as a human-being to interpret them in their proper sequence for the welfare of the society, as indicated in Ṛg.10-72-1

Let us with tuneful skill proclaim these generations of the Gods,

that one may see them when these hymns are chanted in a future age Ṛg.10-72 1.

Symbolic Anthropomorphic Conversation

The tragedy before modern scholars is that oriental scholars are not acquainted or unaware with the principles and theories of modern science. Similarly is the case with modern scientists, so far as there knowledge of the Vedic literature and Sanskrit is concern.

The Vedic literature is in the form of metaphors and riddles, it indicates towards the phenomena of the nature and the natural reactions going on in the nature. With the knowledge of the modern science the indications can be understood. Hence for the interpretation of the indications one must know the Vedic terminology in its proper way, because Vedic terminology with myths of mythology is a product of long history of climatic conditions. The Vedic deities, they actually represent either the component of nature or natural phenomena. The anthropomorphic nature of the deities and their figurative description with personification is a way of expression of the thoughts about the natural phenomena at molecular level. The battle between the two forces is a symbolic expression of forces and counter forces involved in the reaction at molecular level. Although without reference and the knowledge of the related phenomena the

metaphors are hard to understand, where words are only the coded indicators. As such with an aim to decode the Vedic metaphors a scientific terminology of the Vedic deities has been prepared to interpret the Vedic hymns and metaphors in a chronological order with depth of the Vedic knowledge. In the same manner the riddles can also be solved, where words are only coded indicators and the unexplainable metaphors **explore** their true meaning.

The knowledge in the metaphors has been expressed in an anthropomorphic manner through dialogue between the two or more components involved in the reaction or phenomena at molecular level. At some places the natural factor him self reveal the truth about the fact in an anthropomorphic manner. For example, it has been expressed that the creation is sustained and held up by fundamental energy.

The answer has been given that the creation is rested upon unborn's navel, wherein abide all things existing. He is in the middle of the creation just like a great monster- *Yakṣa*. All are set in him like the branches of a tree. The same truth has been revealed symbolically through the mouth of fundamental energy in an anthropomorphic manner- w*ith the mind's eye I (Spirit) think that I (Fundamental energy) behold them who first performed this sacrificial worship.6*

It is possible due to the fact that the human body represents a microcosm in side a macrocosm and the body is complete in it self. Similarly the presence of ozone layer in the atmosphere has been revealed by the life it self in an anthropomorphic manner-

Dyaus is my Father my begetter: kinship is here. This great earth is my kin and Mother. Between the wide-spread world-halves is the birth-place: the Father laid the Daughter's germ within it. Ṛg. 1-164-33

The life on the earth is a puzzle. The truth has been explained through the mouth of the life in an anthropomorphic manner symbolically.'' *The sun in the sky is my father, who is the cause of life, earth is my mother, who nourish me and my birth place is in between the world halves*, (where ozone layer absorbs the toxic ultra violet rays).''It means the life has its origin after the formation of the Ozone layer in the atmosphere.

In the *Ṛbhu sūkta* the facts about origin of life has been revealed in an anthropomorphic manner by addressing the *Ṛbhus* and through conversation between different *Ṛbhus* symbolically.

The dialogue between *Indra-Marut and Agastya Ṛg.*1-165, symbolically it reveals the atmospheric reaction for rainfall.

The dialogue between *Indra- and Agastya Ṛg.*1-70, symbolically the conversation reveal the importance of electromagnetic energy

in the atmospheric reactions.

The dialogue between *Agastya and Lopamudra Ṛg.*1-79, it indicate role of passion in life.

The dialogue between *Viśvāmitra and rivers -Vipāt and Śutudrī Ṛg.* 3-33, it indicates the construction of Dams for irrigation on the rivers.

The dialogue between Indra - Indrānī and Vṛṣākapi, it reveals the importance of chemical energy in the life of human beings. The Indrānī represent the chemical energy, when the living- body in active with ageing and metabolism seized. It means the body is unable to accept the chemical energy of food, accordingly body became dead, just like dead wood. The *Vṛṣākapi* represents living-being and Indra represent Electricity in the body, the function of the body depends on the generation of electromagnetic energy in the body with metabolic reactions, hence it has been said that Indra is supreme.

*Akṣa sūkta Ṛg.*10-34, it reveals the human psychology in life and importance of ethics in life with fate of a gambler.

The dialogue between *Paṇis and Saramā Ṛg.*10-108, the conversation is symbolic, which reveal the importance of solar wind - *Saramā*, She is the messenger of *Indra* and mother of *Tvaṣṭ ā,* the cow is metaphor for the food material in the living beings,

which is synthesized by the *Tvaṣṭā-DNA,* the *Paṇis* symbolically represent the obstacle in the formation of ions of the bases of the DNA.

Bhikṣu *sūkta (Āṅgirasa speaker) Ṛg.*10-117, it reveals importance of generosity and fate of miser in social life.

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5. The Natural Deities

I. Aditi - Nature

The natural components have been invoked as the deities and nature as goddess *Aditi.*

Aditi is the mother of a small group of Gods known as *Ādityas*, of whom *Varuṇa* as the chief. In the cosmogony hymn *Dakṣa* is said to have sprung from *Aditi* and *Aditi* from *Dakṣa* (Ṛg. 10-72-4), this reciprocal relationship indicates that in the primeval condition of the creation, the fundamental charged particles constitutes the micro nature from which *Dakṣa* the solar nebula came in to the existence, from nebula the solar system and the nature came in to the existence.

Aditi - (micro nature) - Nebula - Solar system - *Aditi* (infinite nature)

Aditi's eight sons are eight planets of the solar system. *Vasus* are related with the natural forces through which nature is working.

Aditi is associated with all the natural components. The natural components have been described as deities and have been invoked as God, which give a different look on these deities. But if we concentrate with deep insight on these natural deities than their connection with functions of the nature gets almost clear. There are about thirty three gods as described in the Ṛgveda, which can be grouped in to three, belonging to the three divisions of the universe earth, atmosphere and sky.

Terrestrial deities are earth, *Agni* and *Soma*.

Atmospheric deities are *Indra*, *Apām/napāt, Rudra, Maruts*, - Air, *Parjanya* and *Apas* - the waters.

Deities of sky, are *Dyaus*, sun and solar phenomena related with the sun, such as *Varuṇa, Mitra, Savitā, Pūṣan*, the *Aśvins* and the Goddesses *Uṣas, Dawn* and *Ratri*- night.

The physical features of the Vedic deities are anthropomorphic. Thus head, face eyes, arms, hands, feet and other portions of the human frame, as ascribed to them are symbolic. The figurative description is simply meant to describe their activities figuratively, otherwise their connection with nature and natural phenomena are almost clear. It is also evident from the fact that there is no description of idols and temples in Ṛgveda. It means the figures

are symbolic expressions of their activities, which can be easily understood if concern knowledge is there.

The deities has a beginning and are not thought to born erroneously at the same time, sometimes Vedic seers have referred the earlier deities and certain deities have been described as the off-springs of others, which indicates that the natural forces have been generated from one another. The deities became immortal by drinking soma is a symbolic expression of a chemical phenomena, which initiates the formation of the atoms and molecules of the natural components, where *Soma* is a bond energy, which bind atoms and provide them stability. The off-springs of the deities signify that the natural components and forces are interconnected, and one force may generate other. The home of the deities has been described as sky (heaven), which indicates sun and zone of ionosphere in the upper atmosphere. Each deity has been considered as supreme and mighty, which regulates the order of nature no one can thwart their ordinance. It means that natural components are independent in themselves and inevitable for the nature.

About a dozen deities have been invoked in pairs, such as *Dyava - prthivi* - heaven and earth, *Mitra - Varuṇa, Apām napāt, Agni - Soma*, *Indra - Soma*.

Besides the pair of deities, there are a certain number of more or less definite groups of deities. They are associated with some particular God, such as *maruts* or storm - gods, *Rudras* are associated with their father *Rudra* and *Ādityas* have been mentioned in company with their mother *Aditi*. Another important group is of *Vasus*. *Indra* has been associated with *Indras*. There is also *Viśvedevas* means all Gods.

Invoking the deities in pairs and in groups- It indicates their connections with each other, which signifies that for their functions in the nature they are dependent and associated with each other, although independently they are supreme and inevitable for functions of the nature.

The deities have been described as great, they regulate the order of nature, they hold sway over all creatures, no one can by pass their ordinance, fulfilment of desire is depends on them, they bestow prosperity to mankind.

Only one in whom injurious traits appear is *Rudra*. The Rudra represent oxidation reaction, which is beneficial in the living-beings, and the same decompose the body after death.

The natural deities are true and have been regarded as friends and protector of honest. They punish sin and guilt. It means that the natural benefactors are for wise utilization, whenever over

exploitation is there, or misuse of natural components is there, consequent imbalance in the nature causes natural catastrophe, the same is the punishment for mankind

a. Deities of the Sky

Deities of Sky are *Dyaus - Varuṇa, Mitra, Sūryā, Savitā, Puṣan*, the *Aśvins, Uṣas* and *Ratri.* They represent solar phenomena related with the sun. Sun has been regarded as the main energy source on the earth and has been described as the eye and the soul of creation. All the activities, which are going on in the creation have been attributed to the sun.

***Kāla*-time** Atharvaveda 19-53, 54**, *the Kāla*-time** is the main cause of creation, time is responsible for everything. The time is calculated with sun's movement at its axis, which is known as *Sāṁvātsar Kāla* or year. Along with this all the planets in the solar system are moving around the sun and rotate at their axis, through their magnetic field, they influence weather and climate on the earth's surface. The duration of the day and night with rising and setting of the sun are related with solar phenomena, they are most important for living organisms. The germinating plants shows maximum growth during morning and evening hours. Hence morning and evening have been regarded as auspicious time for

health purpose.

The *Aśvin* represents morning and evening, The savitra is stimulator of metabolic reactions in living-beings and the thoughts in human beings, *Aśvins* are the sign of longevity, it means if morning and evening hours are utilized properly, they can check ageing.

Aśvins- represent nucleotide pairs on the DNA, they are the regulator and controller of life, if they are working properly, they can cure diseases and they can check ageing.

Mitra is the visible light of the sun, which is essential for photosynthesis and important for the creation, as such *Mitra* - light is friend of all creatures. *Mitra* has been invoked with *Varuṇa, the Varuṇa* is God of water, it means with the visibility of light, temperature get increases, which initiates evaporation and transpiration, which are responsible for the rainfa

Mātariśvan **- Carbon di oxide** is said to produce in the heaven and has been brought on the earth, it indicates that the carbon atom is generated in the heaven and its next birth is on the earth, where it has produced carbon di oxide.

b. Deities of the Atmosphere

Atmospheric deities are *Indra Apām-napāt, Rudra*, the *maruts,*

Vāyu, Parjanya and Apas - the waters.

Electric energy - *Indra* has been described as the lord of atmospheric deities, he is regarded as twin brother of *Agni*, his physical features are anthropomorphic, his arms or weapons are the indicators of atmospheric activities. *Indra* has close connection with *Soma, Varuṇa, Sun and Aditi*, it signifies the universal nature of Indra-electricity..

Magnetic energy – Soma In actual sense *Indra* represents electric energy. In the Veda *Soma* has been described as a plant, as a moon and as an energy also, he is the lord of speech, plants, earth, sun and moon. It means, he is associated with them and as such they have been identified as *Soma*, it signifies magnetic energy within them, *Soma* and *Indra* together represents electromagnetic energy, which is involved in every activity of nature. As such *Indra* and *Soma* are the essential part of nature (*Aditi).*

Gravity - The *Varuṇa* lord of water, water consist of H2O - hydrogen and oxygen. The bond energy -electromagnetic energy in the water molecule has been indicated through *Soma* and *Indra.*

The hydrogen and oxygen are gases without mass they constitute the water molecule H_2O with gravity. Accordingly with gravity the water molecule came in to the existence. It has been expressed by

Varuṇa as lord of water.

The atmospheric activities lightning, rainfall, thunder storm and wind flow are associated with electricity. Today it is a fact that atmospheric layers - troposphere, mesosphere, stratosphere, ionosphere and magnetosphere are interconnected through global electric circuit G E C and are influenced by each other. The activities of these layers, ultimately affects weather and climate on the earth. Symbolically the same has been indicated through the activity of *Indra*, his thunder bolt *Vajra* is his electric charge, his drink *Soma* is a magnetic energy. When electrical and magnetic disturbances are there in the atmosphere, then electricity with disturbed magnetic field brings magnetic storms and thunder storms, which creates havoc in the atmosphere and on the earth. The same has been described as energetic angry nature of *Indra*. The *Soma* has been described as *Apām napāt*, which bring rains, *Parjanya* are rain clouds, which are having positive & negative charges. When these two charges colloids it causes lightning and rain, the same has been described as killing of the demon of draught- *Vṛtra* by *Indra.* The battle of *Indra* with *Vṛtra* to release the imprisoned cow is a symbolic expression for the rainfall, as rains have been described as milk, ghee or honey, which signifies the nourishing character of rainwater and the cow, is a metaphor for the rain clouds.

Water clouds - *Maruts* have been described with *Indra, Rudra* and *Vāyu*-wind. They are related with the clouds in the atmosphere. Which check the sun light, their father is *Rudra*. There are eleven *Rudra*, which have been described with air, it signifies oxygen-oxidation. When it is said that *Rudra* is having medicinal properties, he is physician of physicians. It means with oxygen he provides remedies for diseases, which is its beneficial aspect or *Ṣiva Bhava*, till the capacity of breathing is there in the living-beings, they survive. When respiration is seized, with death, the same oxygen oxidise the dead by degradation, which is its maleficent demon like character. *Rudra* initiate oxidation reduction reactions in the atmosphere, hence he is regarded as their father, the *Indra* - electricity and wind, when they colloid in the atmosphere, they produce thunder storm, roaring, lightning and rainfall. Hence they (*Maruts*) have been described with *Indra*. With rain fall clouds are disappear and path for sunlight became clear. The sun has been personified as *Viṣṇu* Ṛg. 1-154 and has been identified with the activities of *Indra. Viṣṇu* is the visible form of light on the earth, which is associated with all the biological and chemical reactions going on in the nature, due to the changes in temperature and light. His three steps are sky, *Antrikṣa* - heaven and earth, which is a course of light from the sun to earth. It has been said that his two steps are visible and one step is

invisible, it means in the *Antarikṣa*, where the ozone layer absorbs the UV radiations. It is his invisible step the other two steps are sky and earth. The different forms of water have been invoked as *Apas* and *Apām napāt* (Ṛgveda 2-35) here water has been identified as *Agni* and as son of water, which represents water vapours, the *Agni garbha*-embrys of water, it indicates about the electromagnetic bond energy, which binds hydrogen and oxygen atoms in a water molecule.

c. Terrestrial Deities

Terrestrial deities are *Prithivi - Earth, Agni* and *Soma*.

Prithivi - Earth has been invoked as the dwelling place for natural components. It provides space for nature and natural activities. *Agni* is main component on the earth. *Agni* has three birthplaces with three fold nature. The three places of birth are sky Sun), *Antarikṣa (atmosphere) and* earth.

The sky is the place of sun, which is its first birth place from there it came to *Antarikṣa*.

***Antarikṣa*,** where it is trapped by earth's magnetosphere and ozone layer absorbs the toxic UV radiations. Where ionization in the ionosphere gave it second birth, from here it came on the earth's surface, where plants convert the visible light in to chemical

energy. It is its third birth. The actions and inter-actions going on at these three places have given it a threefold nature. It has been expressed as *Agni* - energy is the cause of creation, it has been indicated in the very first stanza of Ṛgveda - 1-1-1.

I call Agni - energy, which is priest, deity and (Ṛtvij) the invoker of the sacrifice, the bestower of treasure.

Here sacrifice signifies the creation sacrifice - actions and inter-actions, which are going on in the creation, through which creation has its beginning and a source of its existence.

Soma **- Magnetic energy** - *Soma* is a terrestrial deity, which is being associated with *Indra, Agni, Puṣan*, *Rudra*, *Soma* are companion of *Indra* and they ride on the same car. It indicates that *Indra* is electricity and *Soma* is a magnetic energy, which together known as electromagnetic energy, accordingly they have been invoked with each other as riding on the same car.

By Soma are the Adityas strong, by Soma mighty is the earth.

This Soma in the midst of all these constellations hath his place.

In fact *Soma* signifies magnetic energy, power of the sun is in *Soma* means its magnetic spots and magnetic field, the earth is great due to the *Soma* means earth's geomagnetic field and magnetosphere. In other as in *Nakṣtraṇi* (astronomical bodies) *Soma* is present. It indicates that magnetism is present in all the

astronomical bodies. According to modern astronomical principles every rotating astronomical body, which is moving at its axis is having its own magnetic field and magnetosphere.

A plant growing on mountains is also known as *Soma* plant, which is used in preparation of *Soma* juice. It is due to the power of stimulation in it, otherwise all plants are having *Soma*. In some hymns of Atharvaveda and in post Vedic era the moon has been also identified as *Soma*, it signifies the magnetic power of the moon. The moon is a planet of the earth and having induced magnetic field, which influence the earth's geomagnetic field and life processes on the earth, it influences nervous system of the living-beings through brain, the lunatic persons behave abnormally during full moon or dark night, due to the stimulating power of the moon, hence the moon has been termed symbolically as *Soma,* and it is said that in the human body mind is like a moon.

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6. Scientific key for Vedic Hymns

Vedic deities are the source to understand the Vedic hymns. The deities, signifies either a component of nature or natural phenomena, which they represent. With a long history of Vedic culture, which may be about many thousands of years, the names of Vedic deities get transformed in to the personification and worship of nature and natural phenomena, which have been became converted in to the belief that all the objects and the nature with which man is surrounded are animate and divine. Accordingly with time the Vedic deities were being interpreted in different ways according to the fancy of the narrator. As the stories related with the deities have been described in the anthropomorphic

manner, the natural basis of the deity get lost and the anthropomorphic nature of Vedic deities has given the way for personification of the deities and description of the Vedic deities as if they have off-springs and generations. The same has given the concept that Vedic Gods have families. Heaven and earth are the parent of the Vedic Gods, accordingly the description of Vedic deities have taken the shape of myths. Hence in the present era the names of the Vedic deities are having altogether different meanings. Otherwise the names of Vedic deities originally represent different forces and components of the nature. As has been revealed from the fact that Vedic culture was having the full knowledge of the creation, and before the catastrophe, which was inevitable under natural circumstances, the Vedic seers have compiled their knowledge of the creation metaphorically in Vedic hymns. The metaphors are having the indication of the natural phenomena or a chemical reaction. The language of the Vedic hymns is coded and symbolic. The deities and meanings of the words are only to indicate the related phenomena or reaction. They have been described metaphorically as family. The figurative description of the deities is only to indicate their activities figuratively.

Every individual deity is independent and supreme as a head of the family, it means that the deity is inevitable for function of the

nature and the inter relationship of the various factors is responsible for a particular phenomena of nature. It has been indicated through the agency of its family of Vedic deities, which are interrelated for a function. The interrelationship of various factors have been shown through off-springs, brother, sister, spouse, mother and father etc. This interrelationship can be understood if we are acquainted with the scientific terminology of the Vedic deities, as names of the Vedic deities represents the natural forces and natural factors, and their relation with other forces, which are working in the nature.

The functions of the Vedic deities have been expressed in an anthropomorphic manner to indicate the physical phenomena, which they represent. Thus the ancient commentator on Veda *Yāska* (Nir.7,4) speaking on the nature of Gods, remarks that what is seen of them is not anthropomorphic at all, as in the case of the sun, the earth and others. Hence the way through which Vedic seers have expressed their knowledge is personification of the deities, by which the natural phenomena is being indicated figuratively. After the destruction of Vedic culture the natural phenomena and deities became modified into worship of Gods.

Invoking the natural deities is a peculiar feature of Vedic culture, which signifies that every thing, object or a natural phenomena with which we are surrounded are having a good or evil influence on us, as such, heaven, earth, mountains, rivers, plants, animals,

and even objects made by hand such as weapons, chariot, music drums, plough, pressing stones, sacrificial post have been invoked. It is only to indicate that every thing, which is present in the nature. They have their own importance and are for wise utilization, as the Vedic seers have invoked the *manyū*-wrath and *shriddha*-respect also. It was having the motto that every one should feel sense of responsibility towards nature and its conservation

The basic forces of the nature are true Gods of Veda, which can be inspired with motives and passion born like man, but immortal. In fact they are representatives of the phenomena of nature. The degree of anthropomorphism of the various deities varies considerably because when the name of the God is the same as that of his natural function than the personification is not advanced, such is the case with *dyau*- sky, heaven -middle atmosphere*,* *Prthivi*-earth, *sūrya*-sun, *uṣa*-dawn, whose names represent the double character of the natural phenomena and of the force presiding over them. Due to which they have their existence.

The *Vedic* deities have but very few undistinguishing features, while many attributes and powers are shared by all alike. This is partly due to the fact that the department of nature, which they indicates are often much in common. The deities have common source but have different forms to denote a particular phenomena,

which gradually has acquired an independent character.

It means the forces of the nature are having a common source and are interrelated. For the phenomena of nature, one particular force is responsible, which is independent in it self and inevitable for the nature.

Today, it is a fact that on the earth whatever is going on is due to the sun, which influence, weather, climate and life on the earth through its various natural forces. The same has been described as "The sun is the soul and eye of the creation"

The Universe, which is the stage on which the actions of Vedic deities are going on, it has been regarded as three fold, which may be divided in to three domains of earth, atmosphere and heaven. Accordingly the Vedic deities have been classified, which are mainly thirty-three in number and can be divided equally eleven in each sphere. In the *Brāhmaṇa* literature they are classified as eight terrestrial *Vasus*, aerial eleven *Rudra* and celestial twelve *Āditya*. Which are related with earth, wind and sun respectively, *Sarvānukramaṇī of Kātyāyana* deals with Vedic deities in detail, which is an index to Vedic deities. Following the triple classification of Ṛgveda 1-139 *Yāsk* (*Nir.*7,5) has divided the different deities in the fifth chapter of *Nighanṭu* in to the three orders of *Prthivisthana*- terrestrial (Nir.7,14-9.43) *Antarikṣasthana* aerial(nir.10,1-11.50) and *Dyausthana* -celestial(12,1-46) He

further explain that in the opinion of his predecessors *Nairuktah* there are only three main deities, these are *Agni* on earth, *Vāyu* in air and *sūrya*-sun in heaven. It indicates about the importance of three main spheres of the world as reflected in Ṛg. 10-158 May *Sūryā* protect us from heaven,*Vat* from air and *Agni* from the earthly regions.

The fifth chapter of *Nighanṭu*, on which *Yāsk* comments contains in its enumeration of Gods a number of minor deities also so that the number of deities in different spheres became more than eleven. It is important to note that in this list of Gods prthivi and *Tvaṣta* are common in all spheres, some Gods are common in terrestrial as well as aerial, such as *Agni* and *Uṣa*, *Varuṇa*, *Yama Savitā* in the aerial as well a in the celestial. In this manner the classification is according to the relative importance of the deities in different spheres. It indicates that the natural factors equally influence other spheres also through their actions.

The description of Gods-deities metaphorically as a warrior or as a moral ruler and accordingly the glorification of the deities enumerate them as super natural powers. This has given the way for mythological interpretations of the deities after the Vedic period. If we concentrate on the relative importance of Vedic deities other than super natural powers, then only we can interpret the names of Vedic deities.

The scientific interpretation of Vedic terminology is not to glorify the Vedic culture but for the guidance of modern scientists, who can take the guidelines from the phenomena or reaction so as to work on the untouched aspects of the creation system.

Vedic terminology starting from Ṛgveda with time have taken different turn, they have been explained in *Atharvaveda* also. In *Brāhamaṇa*, *Upniṣads* and *Puraṇas* they have taken a totally different turn being associated with spiritual experiences and their imagination in the form of personified super natural powers. It has given the way for narration of the myths in different shapes and forms, which became the basis of Indian mythology as we know today.

Association of Vedic terminology with myths of mythology is a product of long history of time and climatic conditions. Along with this due to the coded language of the Vedic hymns, the subject matter is complex and difficult to interpret.

Family - The phenomena of the nature have been explained through family relationship.

The whole creation is a family under the fundamental energy, from where the creation came into existence. The creation is working as a system, through transformation of energy with actions and interactions in cyclic manners (Ṛg. 10-90-16). The earth, where life is present, it also represents a family, where sky is father, earth

is mother *soma*- magnetic energy is brother, *Aditi*-nature is sister (Ṛg. 10-191-6), accordingly every natural force and its related phenomena have been described as different families.

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7. The Creation - Hymn of the Supreme

Asyavāmīya Sūkta

Most of the knowledge, which is deeply concern with the processes of the creation, through which the creation came in to the existence has been expressed through the metaphoric riddles and their answers are also in the form of metaphoric riddles. Ṛg. 1-164 is having 52 verses. It has almost full knowledge of the creation. Vedic seers, under the laws of phonetics have developed the language code in the form of metaphors and riddles, so that the

maximum information may be coded in the hymns. The words are only simple symbols to stimulate the thought about related phenomenon. It is also evident from the fact that during the compilation of the hymns to save a single syllable was equivalent to the celebration as that the birth of a male child. The composer of this *sūkta* is seer *Dirghtamas*. It gives the idea of an intellectual discussion during the conference, which is known as *Brāhmodhya Carcā,* in the Atharvaveda, it has been divided in two hymns with 50 verses with new addition with change in sequence of the verses in the 9th book.

The questions have been raised just like a head of the Institute ask the question to test the knowledge of the students regarding the creation indicating a particular phenomenon. The answers have been given in a similar fashion. The *sūkta* reveals the secret of the creation and life on the earth systematically.

The Solar System in the Riddles

Of this pleasant (vama) hoary invoker- of him the brother is the midmost (aśna); his third brother is Ghee backed (Ghṛt pṛṣṭha); there I saw the seven sons of chief of the world Ṛg. 1-164-1

The first riddle gives the idea about creation that the supreme fundamental energy, which has been invoked in the creation sacrifice, guarded by him (sun), his middle brother *is Asnaha*- air and the third brother *is Ghṛt pṛṣṭha*- organic matter. Here I have

seen seven sons of the *Viśvapatim*-The chief of the world. Ṛg.1-164-1

It has been indicated that guarded by the supreme is the sun in the heaven, his brother in the middle is air and his third brother is on the earth *Ghṛtapṛṣṭha* the seven sons are seven rays of the sun, who feed the creation on the earth through photosynthesis., Accordingly it has been indicated that sun is the main source of energy on the earth, the middle atmosphere is the second centre, who feed the creation through ionosphere processes, his third brother *Ghṛt pṛṣṭha*, who feed the creation on the earth through the organic matter synthesized through photosynthesis, the whole play on the earth is due to the conversion of light energy in to the chemical energy through photosynthesis, hence the seven rays have been termed as seven sons of the *Viśvapatim*-The chief of the world. In this way the Vedic seers have drawn the attention towards the three main centres of the creation, sky (sun), air-atmosphere and plants on the earth.

Seven harness (yuj) a one wheeled chariot; one horse, having seven names, draw (vah) it; of three naves (is) the wheel unwasting, unassiled where on stand all these existence. Ṛg. 1-164-2

The seven harness of one wheeled chariot are seven planets of the

solar system, the solar system has been termed as one wheeled chariot. One horse having seven names is sun, which has seven visible rays and is responsible for the working of the solar system. The three naves are sun in the sky, who feed the creation through its nuclear reactions at its surface, the second nave of the creation is the middle atmosphere, where, magnetosphere processes feed the creation through ionization. The third nave is on the earth, where plants nourish the living-beings at its surface through their autotrophic nature. On these three naves (centre) the creation has its existence these three centres are working without rest.

The seven they stand on this chariot- seven horses draw it, seven wheeled; seven sisters utter songs of praise together, in whom the names of the seven cows are treasured. Ṛg. 1-164-3

The solar system has been termed as a chariot, where seven planets of the solar system drive the solar system through their movement around the sun as horse, the planets are rotating at their axis, due to this they have magnetic field and the magnetosphere around them, which is responsible for the movement of the solar system, hence they have been termed as seven wheels of the chariot. The seven sisters are seven visible rays, who feed the living beings like a cow on the earth, through the photo-synthesis, due to this the world of living beings came in to the existence through evolution, where

human beings are highly evolved . The human beings utter praise songs which has seven syllables.

During the assembly of the intellectuals in a very respectable manner the questions have been raised regarding the creation system that how it is sustained?

Who hath beheld him as he sprang to being, seen how the boneless One supports the bony?

Where is the blood of earth, the life, the spirit? Who may approach the man who knows, to ask it? Ṛg. 1-164-4

The questions have been raised regarding the creation system that how it is sustained? Who has seen the process of creation? How the boneless one supports the bony? Where is the blood of earth, the life, the spirit?

Unripe in mind, in spirit undiscerning, I ask of these the God's established places; For up above the yearling Calf the sages, to form a web, their own seven threads have woven. Ṛg. 1-164-5

The other question about the creation that where is the station of the natural forces under which the yearly calf (the living creatures on the earth) weave a web through its own seven threads.

The question regarding the God's established places is thought provoking. It has been indicated that the living-beings are just like

sages, who weave the food webs in the nature by their own functions. The person, who has raised the question know the cause of food chain and food webs in the nature, but he want to know the god's established places, through which the creation is working as a system.

I ask unknowing, those who know, the sages, as one all ignorant for sake of knowledge. What was that One who in the Unborn's image hath established and fixed firm these world's six regions. Ṛg. 1-164-6

The other question regarding the creation is also thought provoking. It means the person, who has raised the question knows that the unborn fundamental energy has established and fixed firm the world's six regions. He is asking about the nature, and image of the unborn energy, under which the creation is working as a system.

Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing thmselves in a wrap, they drunk water with the foot.Ṛg. 1-164-7

The question about the lovely bird's securely founded station is also a thought provoking question for the thinkers. The person, who has asked the question, is well acquainted with the

photosynthesis. The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth's surface from the head of the sun. These rays are trapped by the plants for the photosynthesis, which acts as milk-food *(kṣhir*) for the living-beings hence the visible rays of the sun have been compared with the milk and plants as kine. The absorption of water by the green plants has been indicated through the drinking of water with the foot, they represent root system. He has asked the question to his pupil about the source of the factors, which are responsible for photosynthesis.Ṛg.-164-7

The questions which have been raised in the stanza from 4 to 7, their answers have been given systematically.

Who hath beheld him as he sprang to being, seen how the boneless One supports the bony?

Where is the blood of earth, the life, the spirit? Who may approach the man who knows, to ask it? Ṛg. 1-164-4

The questions have been raised regarding the creation system that how it is sustained? Who has seen the process of creation? How the boneless one supports the bony? Where is the blood of earth, the life, the spirit?

1. Who has seen him as he sprang to being?

Its answer has been given through the metaphor of the mother, father and calf.

he supreme fundamental energy has been designated as father of the creation the micro nature, which came in to the existence in the early stages with the formation of the fundamental particles, it has been termed as mother,

The Mother gave the Sire his share of Order: with thought, at first she wedded him in spirit.

She the coy Dame, was filled with dew prolific: with adoration men approached to praise her. Ṛg. 1-164-8

During the pre-cosmic conditions the mother-nature was in dormant condition along with the Supreme-fundamental energy, *she wedded him in spirit and the coy Dame, was filled with dew prolific,* it means the mother-nature became active with the formation of the charged particles, which is the first seed of creation and the developing creation has been termed as calf.

Yoked was the Mother to the boon Cow's car-pole: in the dank rows of cloud the Infant rested.

Then the Calf lowed, and looked upon the Mother, the Cow who wears all shapes in three directions. Ṛg. 1-164-9

The formation of the ions in the region of ionosphere has been termed as cow's car-pole. The ions from the ionosphere feed the creation like a cow. The cloudy atmosphere of the ions in the

upper atmosphere has been termed as *infant rested*, which when came on the lower surface, they get converted in to atoms and the molecules, it has been termed as ''*the calf lowed* and looked upon the Mother- nature, it means in this manner the infinite-nature, who has all different shapes in the three regions sky, Atmosphere and the earth came in to the existence.

Bearing three Mothers and three Fathers single he stood erect: they never make him weary.

There on the pitch of heaven they speak together in speech all knowing but not all - impelling. Rg. 1-164-10

The three regions- the sun in the sky, middle atmosphere and earth, where the activity of the nature is at its peak, these regions have been termed as three mother and three father, because the fundamental particles, ions, atom and the molecules have been synthesized in the presence of the fundamental energy but the fundamental energy remains unaffected and the seers talk on the earth that we know all this but it is not sufficient.

2. How the boneless One supports the bony?

The answer of this question has been given that the boneless nature supports the creation through the *Sāṁvatsar-Kala*-year, months and the seasons occurring during the year. It is the wheel of order.

The wheel of order

Formed with twelve spokes, by length of time, un-weakened, rolls round the heaven this wheel of during order.

Herein established, joined in pairs together, seven hundred Sons and twenty stand, O Agni. Rg. 1-164-11

The *sāṁvatsar –Kāla-* year, which have twelve months with seven hundred and twenty days and nights (three hundred and sixty days) This *Kāla*-Time is rolling round the heaven. It is related with the rotation of the earth around the sun and movement of the earth at its axis. It is the wheel of order.

The Sun and Moon

They call him in the farther half of heaven the Sire five –footed, of twelve forms, wealthy in watery store.

These others say that he, God with farseeing eyes, is mounted on the lower seven wheeled, six -spoked car. Rg.1-164-12

The seers have expressed that about the wheel of order there are other views are also there. The twelve months of seven hundred and twenty days and night having five seasons (when rainy season of four month) with watery store, it means the time related with the moon has been indicated. *Rg.1-164-12a*

These others say that the wheel of order is having six seasons with

the seven rays of sun, it means the time related with the movement of the sun at its axis has been indicated, where six seasons have two month each. *Rg. 1-164-12b*

Upon this five-spoked wheel revolving ever all living creatures rest and are dependent.

Its axle, heavy-laden, is not heated: the nave from ancient time remains unbroken. Rg. 1-164-13

The five seasons, the year will have five seasons when the rainy season is considered as of four month and rest four season of two month each. This wheel of the year is related with the moon is eternal on which all creatures are dependent.

The wheel revolves, unwasting, with its felly: ten draw it, yoked to the far-stretching car-pole.

The Sun's eye moves encompassed by the region: on him dependent rest all living creatures. Ṛg. 1-164-14

It has been indicated here that the wheel of year related with the sun is without ageing, which spread in all the ten directions along with it sun's eye move encompassed by the region, on him all the creatures have been dependent.

Of the co-born they call the seventh single –born; the six twin pairs are called Ṛṣis, Children of Gods.

Their good gifts sought of men are ranged in order due and various in their form move for the Lord who guides. Ṛg. 1-164-15

It has been indicated here about the intercalary month and an extra single season as seventh season of one month. When the year is considered as of three hundred and sixty days

Actually the year has three hundred and sixty five days, the remaining five days in due course of time has been shown as extra intercalary month with an extra season of one month.

Through the *Sāṁvatsar Kāla*-year and the seasons related with the movement of the earth, sun and the moon. It has been indicated that life on the earth is influenced by these at a length.

Through the yearly course of the sun and the seasons how the nature exhibits its functions, it has been indicated in the stanza 16-17, through the metaphor of mother –nature as cow and her calf as the symbol of the creation

It has been indicated that the creation came in to the existence from the charged-particles. The system is working under *Kāla*-time and the seasonal variations.

The Nature as Cow

They told me these were males though truly females: he who hath eyes sees this, the blind discerns not.

The son who is a sage hath comprehended: who knows this rightly is his father's father. Ṛg. 1-164-16

It has been expressed earlier in the beginning that the unborn fundamental energy has established and fixed firmly the world's six regions. The nature of the fundamental energy has been revealed that the fundamental energy is only one, but people grasp it, according to their mentality, some consider it male and some consider it female.

The person, who knows it its real nature, he became his father's father in knowledge. It is a thought provoking answer of the question raised about the nature of the unborn fundamental energy.

Beneath the upper realm, above this lower, bearing her calf at foot the Cow hath risen.

Wither ward to what place hath she departed? Where calves she? Not amid this herd of cattle.Ṛg.1-164-17

The mother-nature has been compared with the cow due to the nourishing capacity of the nature. The cow is also metaphor for the sunlight, which feed the creation just like mother through the photosynthesis. Accordingly the question is about the rising and setting of the sun. It is a thought provoking question to know the reason of rising and setting of sun at different places of earth at different times.

Where is the blood of earth, the life, the spirit?

Who, that the father of this Calf discerneth beneath the upper realm, above the lower,

Showing himself a sage, may here declare it? Whence hath the God like spirit had its rising?Ṛg.1-164-18

The father – the supreme fundamental energy of the creation, who is above the lower as well beneath the upper, but who will explain, that when has sprung the mind-spirit?

The person, who has raised the question, knows that the fundamental is the cause of the creation, and is just like father of the creation, which is present every where, but he want to know that how the consciousness and mind has been generated?

Those that come hitherward they call departing, those that depart they call directed hither.

And what so ye have made, Indra and Soma, steeds bear as 'twere yoked to the region's car-pole Ṛg. 1-164-19

Bio geochemical cycle of the nature through the ancient and recent, for which *Indra* and *Soma* has made the path, it means electromagnetic bond energy, it decides the path through the synthesis and degradation of the matter in the nature, which has been expressed as recent and ancient. During the life, it is confined to body, and after death it is everywhere.

The whole earth is an ecosystem, which maintains its equilibrium in between its different components through the circulation of the

nutrients and chemicals through Bio-geo-chemical cycle on the earth. This bio-geo-chemical cycle has been termed as **Blood of the earth,** the path of the cycle is set by **the Soma and Indra** – electromagnetic bond energy.

The Life and spirit

Two Birds with fair wings, Knit with bonds of friendship, in the same sheltering tree have found to being a refuge. One of the twain eats the sweet tree fruitage; the other eating not regardeth only. Ṛg. 1-164-20

On this stanza *Sāyaṇa* says that the two birds are the vital and the supreme spirit, dwelling in one body. The vital spirit enjoys the fruit or rewards of actions while the supreme spirit is merely a spectator.

Through the example of two birds on the same tree, out of which one enjoy the sweet fruit and other one is only a spectator. Here the Vedic seers have indicated about the existence of the DNA (De oxy Ribose Nucleic Acid) in the body, who through its hereditary characters leads the life in the body with its actions, through protein synthesis and regulates the life. The same has been termed as *Jeewatma – bio-soul*, and the other one is life-energy, which is in no way different from the fundamental energy, the same is the supreme spirit in the body as spectator, commonly known as soul. Accordingly the soul in the body and the fundamental energy

(*God*) are one and the same

Where those fine Birds hymn ceaselessly their portion of life eternal, and the sacred synods, There is the Universe's mighty Keeper, he, wise, hath entered into me the simple. Ṛg. 1-164-21

The earth where the creatures enjoy the fruit of life, where the two birds (life energy and bio soul) are living in association, the lord of the creatures has entered in to me. It means the life energy and the supreme fundamental energy is same which is present in the body as life energy. It has been indicated here in a anthropomorphic manner that *the Universe's mighty Keeper, he, wise, hath entered into me the simple.*

The tree where on the fine Birds eat the sweetness, where they all rest and procreate their offspring- Upon its top they say the fig. is luscious: none gaineth it who knoweth not the father. Rg. 1-164-22

The earth where in the creation the beautiful creatures eat the sweet fruits of life, they enjoy the life and produces off-springs, at the top of their life they say that life is beautiful, but he, who knows not his generator father, he is in the dark, he gains nothing. It means one should know the purpose of life?

Unripe in mind, in spirit undiscerning, I ask of these the God's

established places; For up above the yearling Calf the sages, to form a web, their own seven threads have woven. Ṛg. 1-164-5

The answer of the above question has been given systematically, through the formation of atom and ionosphere processes in the upper atmosphere. Accordingly the origin of the nature has been indicated, which feed the creation just like mother.

The God's established places ?

The question is regarding the secret places of the natural forces, through which the creation has its existence. The creation is just like a song of fundamental energy, accordingly question has been asked answer has been given that how the song of creation has been fabricated by the fundamental energy. It has been indicated the just like the flow of sound waves, the charged particles are flowing from the cosmos, they fertilize the earth with life without rest.

How on the Gāyatrī the Gāyatrī was based, how from the Tristup they fashioned the Tristup forth, How on the Jagatī was based the Jagatī, they who know this have won them–selves immortal life Ṛg. 1-164-23

On this stanza S*ā*yaṇ says: They who know the station of *Agni*

upon the earth, *Vāyu* that was fabricated from the firmament and that the station of the sun, which is placed in the heaven. It means he who knows the process of the creation, he obtain immortality.

The question has been asked about the *Gāyatrī* - the fundamental particles, how they have generated the *Tristup*-atom, and from the atom how the ions have been formed?

With Gāyatrī he measures out the praise-song, Sāma with praise-song, triplet with the Tristup. The triplet with the two or four- foot measure and with the syllable they form seven metres Ṛg.1-164-24

The answer has been given in the same fashion that with *Gāyatrī*- the fundamental particles, He - the fundamental energy measures out the praise song, with the praise song *Sāma*, triplet with the *Tristup.* Accordingly triplet with the two or four - measure and with syllable they form seven meters.

In a symbolic fashion, it has been expressed that from the fundamental energy first *Gāyatrī*-the charged particles have been generated, with the spinning movements of the charged particles around the nucleus, the magnetic energy has been generated, accordingly the atoms have been formed, and the charged particles electron, proton and neutron have been bound in the atom, just like triplet, from the triplet with two or four foot and with the syllable

the seven meters can be fabricated.

The atom has three charged particles electron proton and neutron, it has been indicated by triplet.

In an atom positively charged protons and neutrons constitute the nucleus, around which vibrating clouds of negatively charged electrons move in elliptical orbits, due to the vibratory movements and spin of electrons, magnetic energy is generated. The magnetic energy with the electrostatic force of the nucleus produces electromagnetic energy, which binds the atoms of similar nature. The atoms of the different elements can produce diatomic molecules, even poly atomic complex molecules and chains of thousand of atoms like RNA and DNA can be produced. In this fashion the atom is the building block of the creation. It has been indicated symbolically through two or four foot and even with syllables they form meters.

It has been indicated in a symbolic manner that how the atoms, molecules and the matter can be formed in the nature.

With Jagatī the flood in heaven he established and saw the sun in the Rathantara Sāman. Gāyatrī hath, they say, three brands for kindling: hence it excels in majesty and vigour. Ṛg. 1-164-25

The Jagatī is the place in the atmospheric ocean, where the high energetic solar winds are trapped by the earth's magnetosphere, (Gāyatrī's three bands are three fundamental particles) where the

three fundamental particles- electron, proton and neutron are converted into the ions, hence it excels in majesty and vigour. It has been expressed that the high energetic solar winds are just like the flood in heaven, they are trapped by the earth's magnetosphere, it has been indicated by the sun in the *Rathantara Sāman,* the base of the creation is ions of the molecules, hence it has been expressed symbolically that with *Jagati - ions,* he get the establishment Ṛg.1-164-25

The Nature as milk Cow

The ionosphere processes going on in the region of magnetosphere, feed the creation just like milk, accordingly the nature came in to the existence, the same has been termed as milk cow, how she nourish the creation, just like cow feed her calf, it has been indicated metaphorically.

I invocate the milch-cow good for milking so that the milkier, deft of the hand, may drain her. May Savitar give goodliest stimulation, the caldron is made hot; I will proclaim it. Ṛg. 1-164-26

Here it has been indicated that those who know the importance of the upper atmosphere, they can extract much more from the nature for their welfare. The upper atmosphere, is just like milk cow, and the *Savitar* is the stimulator

She, lady of all treasure, is come hither yearning in spirit for her calf and lowing. May this cow yield her milk for both the Aśvins, and may she prosper to our high advantage. Ṛg. 1-164-27

The nature is treasure of wealth of all kind, she lower down for her calf (creation), it has been proclaimed that the nature may yield her milk for the *Aśvin (DNA)* - living-beings.

It has been indicated that due to the ionosphere processes in the upper atmosphere, the nature came in to its full functions with natural forces on the earth. She is feeding the creation just like mother. She may yield her milk for the *Aśvins.* The *Aśvins* represent nucleotide pairs of DNA, the DNA is universally present in the living-beings. Hence, it has been proclaimed that she may yield her milk for the *Aśvins* -living-beings.

The cow hath lowed after her blinking youngling; she licks his forehead as she lows to from it. His mouth she fondly calls to her warm udder and suckles him with milk while gently lowing. Ṛg. 1-164-28

The mother- nature lowed after her calf (creation) and feed the creation just like a milk cow.

He also snorts, by whom encompassed round the Cow lows as she clings unto the shedder of the rain.

She with her shrilling cries hath humbled mortal man, and, turned to lightening, hath stripped off her covering robe. Ṛg. 1-164-29

The mother cow-- The nature make noise with thundering and lightening, just like the mother cow make noise around her calf, in the same fashion the nature come nearer to the creation through rains and surround the creatures. The nature synthesizes the natural components and the same disintegrate in the nature with removal of the covering robe, it has been indicated by the removal of covering robe symbolically.

The Mystery of life

The mystery of life on the earth has been explored in the stanza from 30 to 33.

That which hath breath and speed and life and motion lies firmly established in the midst of houses. Living by offerings to the Dead he moveth Immortal one, the brother of the mortal. Ṛg. 1-164-30

The living creature shows energy transformation, life and motion, in them, the life energy lies in the midst of houses (cell), he is immortal living in the cell body as brother of the mortals.

In this way the presence of life energy has been indicated.

I saw the Herdsman, him who never stumbles approaching by his pathways and departing. He clothes with gathered and diffusive splendour within the worlds continually travels.Ṛg.1-164-31

The life energy has been termed as *herdsman* – the guardian, he

travel continuously among the creatures with different covering and invisible. It means the life energy is generated at its own and disappears with time at its own with ageing of the cell body. It travels on the earth in different forms with different physical cellular body. The cell bodies are just like clothes.

He who hath made him doth not comprehend him: from him who saw him surely is he hidden. He yet enveloped in his Mother's bosom, source of much life, hath sunk into destruction. Ṛg.1-164-32

Here the presence of bio-soul (DNA) has been indicated, it has been said that the living-being, who produce the off-spring through reproduction, they are unable to see him and the person who see him he is hidden from him. *Yet he is enveloped in the Mother's bosom, source of life and enter in the sufferings.* It means the bio-soul-DNA is hidden in the body, with the development of the physical body, it face the consequences of life.

The Protector of life–Ozone layer

Dyaus is my Father my begetter: kinship is here. This great earth is my kin and Mother. Between the wide-spread world-halves is the birth-place: the Father laid the Daughter's germ within it. Ṛg. 1-164-33

The life on the earth is a puzzle. The truth has been explained

through the mouth of the life in an anthropomorphic manner symbolically.'' *The sun in the sky is my father, who is the cause of life, earth is my mother, who nourish me and my birth place is in between the world halves*, (where ozone layer absorbs the toxic ultra violet rays).''It means the life has its origin after the formation of the Ozone layer in the atmosphere.

I ask unknowing, those who know, the sages, as one all ignorant for sake of knowledge. What was that One who in the Unborn's image hath established and fixed firm these world's six regions. Ṛg. 1-164-6

The question has been raised regarding the one, which is in the image of the unborn fundamental energy, which has firmly established the six regions of the world. It means the infinite nature, under which the creation is working as a system. How the system is working? The answers have been given in a symbolic fashion with questions to stimulate the related thought.

The Creation

1. The *Yajña*- actions and inter-actions- The creation, is a model of *Yajña*- actions and inter-actions. Accordingly, the questions, related with the model have been raised, and the answers have been given with the tune of model.

I ask thee of the earth's extremist limit where is the centre of the world, I ask thee. I ask thee of the stallion's seed prolific I ask of highest heaven where speech abideth. Ṛg. 1-164-34

The *yajña- vedi, is the model of the creation sacrifice, accordingly, the questions have been raised, that if, it is the model, then, where is the earth's extremist limit? Where is the centre of earth? Where is the* stallion's seed prolific?, which carry it forward? Where is the highest heaven of speech?

The answers have been given through the model, *yajña- vedi.*

This alter is the earth's extremist limit; this sacrifice of ours is the world's centre. The Stallion's seed prolific is the soma; this Brāhmaṇ highest heaven where speech abideth. Ṛg. 1-164-35

The answers have been given through the sacrifice (*Yajña*- actions and interactions) that this sacrifice alter *–yajña-Vedi* is earth's extremist limit, it means they are drawing attention towards the fact that the earth has came in to the existence through action and interactions under space- time relationship and it will go to its end through the series of actions and interactions as going on in the sacrifice altar- *Yajña-Vedi.*

The answer of the 2nd question has been given thorough the model, that the Ghṛta used in the *Yajña, the* Ghṛta, represent soma, hence, it has been said that *the Stallion's seed prolific is the soma.* It

means the centre of the creation lies in the series of actions and interactions, through which the creation is sustained and working as a system, The Soma- magnetic energy is the regulator, who carries the system forward, just like *the Stallion, it carries forward the creation, through* the electromagnetic bond energy. The electromagnetic bond energy is the product of Soma- magnetic-energy. Hence, the electromagnetic bond energy has been termed as stallion's seed prolific is soma.
it has been also explained in the stanza Ṛg. 1-164-50

The *Yajña*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions are generated, where according to the cosmic law, *Deva* – fundamental particles are the first, with their activities, they reach to the height of matter, and with disintegration in the nature, they are converted in to the fundamental particles- *Dev*a. It means initially the fundamental particles are the first in the series of action and interactions, through their activities they are converted into the matter and again reached to their original old state of *Deva* – fundamental particle, which indicates about the natural cycles, through which the natural components are synthesized and disintegrated in the reversible direction with breaking of the bond energy.

The stallion's seed prolific is Soma- it means the *Soma* – magnetic energy, which is present in all the planets, asteroids, *Nakṣatras* and the sun, matter and in the living creatures, they have the internal energy source as well as they are interconnected with the inter planetary magnetic field, hence *Soma* –magnetic energy has been regarded as the seed prolific, which is generating at its own, due to the movements of the astronomical bodies at their axis. The position of the planets in the universe is also due to the interplanetary magnetic field.

This Brāhmaṇ highest heaven where speech abidethṭ The answer has been given in tune of the model, that *this Brāhmaṇa Priest, represent the Brāhma, just like the Vāc-speech of the Priest is imperishable and remains in the heaven, in the same fashion the heaven is the place of Vāc*-speech energy, where the *speech abidethṭ.*

It means the *Vāc*-speech is imperishable, and its highest place is in the universe, the place of supreme fundamental energy has been termed as *Brāhma's* voice. It means the fundamental energy and the speech energy are synonym in their nature.

The Solar System

Seven germs un-ripened yet are heaven's prolific seed: their functions they maintain by Viṣṇu's ordinance. Endued with

wisdom through intelligence and thought they compass us about present on every side. Ṛg. 1-164-36

The seven un-ripened seeds, represents the seven planets of the solar system, the life is present only on the earth and other seven planets are without life and climate, hence, they have been termed as unripe, their functions are dependent on the sun.

Their functions they maintain by Viṣṇu's ordinance, *theViṣṇu* represent the solar rays, it has been expressed that the planets of *the solar system are working under the cosmic principles of sun and solar rays.* The influence of the seven planets of the solar system on the earth has been indicated. They influence the life and climate on the earth through their magnetic field and the infrared rays, hence it has been said that they compass us about and present on every side.

The origin and evolution of the creation has been indicated symbolically.

Mystery of Life

What thing I truly am I know not clearly: mysterious fettered in my mind I wander. When the first-born of holy Law approached me, then of this speech I first obtain a portion. Ṛg. 1-164-37

Thr root cause of the creation, *When the first-born of holy Law*

*approached me, then this speech***,** it means, through the *Vāc-energy*, the men speak in the society. When the seer has traced the root cause of the creation, then he express that with this I got the answer, that how, we have reached at the height of speaking in the council in the creation. The knowledge, which he has obtained, is just like a small portion. He has explained the same, in a systematic order.

The physical building block

Back forward goes he grasped by strength inherent the Immortal born the brother of the mortal. Ceaseless they move in opposite direction: men mark the one and fail to mark the other. Rg. 1-164-38

The generation of the magnetic energy in the womb of the atom has been expressed, through the Immortal born the brother of mortal. The movements of the charged particles, has been indicated by *Ceaseless they move in opposite direction:* The men can mark the movements of the charged particles, but he is unable to mark the generation of magnetic energy in the atom. The magnetic energy grasped the strength with formation of the electromagnetic energy. It is the inherent strength of the atom, and building block of the creation**.** It has been indicated.

In this way the formation of the atom has been expressed, the

atom is the building block of the creation.

It has been indicated that with birth the bio soul - DNA exhibit dual function, which record the thoughts and deeds in forward direction, which is grasped by strength inherent in the DNA, on another side the bio soul- DNA develop the physical body with hereditary characters. It has been expressed by *Immortal born the brother of the mortal. Ceaseless they move in opposite direction:*

The language of the thought energy is immortal and physical body under go ageing and finally decayed in the nature. It has been expressed by saying that they move in opposite direction without rest. The people mark the decay of the body but fail to mark the fate of bio-soul-thought energy.

The Source of Creation and functions

Upon what syllable of holy praise-song as 'twere their highest heaven the Gods repose them – Who knows not this, what will he do with praise-song? But they who know it well sit here assembles. Ṛg. 1-164-39

It has been indicated that the highest heaven is the place of praise songs, the Gods repose them. It means the *Vāc* – speech- energy is imperishable and remains in the universe, he, who knows not this fact, what he will do with chanting the praise songs? The people

who knows this, they work and sit together in the assembly. In this fashion the importance of *Vāc* - energy has been indicated with a thought provoking question mark, on simple recitation of the praise songs of the Vedic hymns.

The Nature - the source of chemical energy

Fortunate mayst thou be with goodly pasture and may we also be exceeding wealthy. Feed on the grass O cow at every season and coming hitherward drink limpid water. Ṛg. 1-164-40

The sun is the soul and eye of the creation. The light energy of the sun has been compared with cow, the cow feed the calf with milk, in the same fashion the sunlight feed the creation with photosynthesis by the plants and evaporation of water from the surface of the earth, it bring rains, hence it has been prayed to sunlight that feed on the grass and drink limpid water symbolically.

In this way, symbolically**, the nature has been welcomed, with treasure of natural wealth,** O cow at every season feed on the grass- the importance of white light, photosynthesis, and **chemical energy**, for the living-beings has been indicated. The importance of water in the nature has been indicated by drink limpid water.

The Cosmic source of the creation

Forming the water-floods the Gāuri buffalo hath lowed one footed or two footed or four footed she, Who hath become eight footed or hath got nine feet the thousand syllable in the sublimest heaven Ṛg.1-164-41

In the primeval condition of the creation, the charged particles have been generated, which feed the creation just like buffalo. According to *Sāyaṇ, Gāuri is Vāc*-speech, it has been expressed that just like the *Gāuri - Vāc*-speech spread in all the direction. In the same fashion the charged particles have spread in countless channels in sublimate heaven.

The sublimate heaven is expression for the appearance of space from the unfathomed cosmos.

From her descend in streams the seas of water; thereby the world four regions have their being. Thence flows the imperishable flood and thence the universe hath life Ṛg. 1-164-42

It has been expressed that the charged particles have descending from the cosmic ocean in countless channels, just like streams of sea water. They have filled all the four quarters of the world with existence.

I saw from far away the smoke of fuel with spires that rose on high that beneath it. The Mighty men have dressed the spotted bullock. These were the customs in the days a foretime Ṛg.1-164-43.

The smoky clouds of the charged particles constitute the nebula

with generation of internal force. It has been expressed by the smoky clouds of fuel with spires that rose on high,
The formation of the nebula in the primeval condition of the solar system has been expressed by 'The Mighty man Soma, the Supreme energy has dressed the spotted bullock. With the movements of the charged particles, the Soma has occupied the centre. It has taken the first seat, under cosmic principles.

The three rays of life on the earth

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure Ṛg. 1-164-44
The three with long tresses, they represent role of three energies, in the life on the earth's surface. They appear with birth of life, and disappear with death. The life cycle of the living-beings, exhibits the functions in an ordered sequence, under the impact of three energies in the life.
Of one of them sheareth when the year is ended,

With birth the life appear, the physical body develop with synthesis, and with the end of the life cycle the body disintegrates in the nature with ageing. The end of life has been indicated by the

end of the year symbolically. The synthesis and disintegration in the body is controlled by the **electromagnetic bond energy,** during the life it synthesizes the cellular body, and the same disintegrate the body after death. It has been indicated by *one of them sheareth when the year is ended.*

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time with food.

of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle. The figure of life-energy is invisible.

The life energy- consciousness in the body shows motion but his figure is not seen.

These three energies, shows their impact in orderly sequence under cosmic principles, and remain unaffected. It has been indicated.

In this way the answer of the question, about God's established places, through, which the living-beings have formed the food chains and food webs through, their own food, it has been indicated.

Lovely Bird's securely founded station

Conclusion - the cosmic energy

Speech hath been measured out in four divisions the Brāhmans who have under standing knows them. Three kept in close concealment causes no motion of speech men speak only the fourth division Ṛg. 1-164-45

It has been indicated here that the speech has four measuring division, the men speak only the fourth, the rest three are concealed. It means men speak only the fourth the *Vaikhri-vāc*. The three other *Para, Paṣyanti* and *Madhyama* remain dormant. It also reveals the truth that man is acquainted with only one fourth of the *Vāc*-speech energy and the rest three-fourth in secret.

It has been indicated metaphorically through the four division of *Vāc* - speech that three-fourth of the cosmic fundamental energy is invisible in the cosmos and the visible world is only one-fourth of it, through it the fundamental energy exhibit its functions with energy transformation.

They call him Indra, Mitra,Varuṇa, Agni and he is heavenly nobly-winged Garutmān. To what is one, sages give many a title: they call it Agni, Yama, MātariśvanṚg.1-164-46

It has been indicated that the creation has came in to existence from an supreme fundamental energy through energy transformation, the different natural forces are his different forms and the *Brāhmin* call the same fundamental energy with the

different names. Through its different forms the fundamental energy has established the world's six regions. *Indra* is electricity, *Mitra* is light, *Varuṇa* is gravity, *Agni* is heat, *Agni* is fire, *Yama* is chromosome, *Matariśvan* is carbon di oxide, nobly-winged *Garutmān* is magnetic energy, they are different forms of energy, it has been expressed.

In a symbolic way a question has been raised about the secret stations of the creation, through which the creation is working as a system under the control of the Supreme fundamental energy. It has been indicated that the creation is working as a system under the cycles of nature. These cycles are lovely bird's secret stations–it means supreme fundamental energy's secret stations, through which the creation is working as a system. The important cycles operating in the system have been indicated.

The sun-spot cycle

Dark the descent: the birds are golden coloured; up to the heaven they fly robed in the waters. Again they descend from the seat of Order and all the earth is moistened with their fatness' 1-164-47

Dark the descent: The dark is symbol of sun-spots, they regulate the climate on the earth, with their cycle of 11/22 years, with formation of the electromagnetic energy in the sun-spots, they explode and descent with solar flares, they affect the climate with rainfall. It has been indicated by Dark the descent: accordingly

with increase in temperature on the earth, the water vapours fly up to the heaven, just like golden coloured birds, they descend from the seat of order again with rain fall, and all the earth is moistened with water-fatness. It has been expressed.

The Cycle of the year

Twelve are the fellies and the wheel is single; three are the naves. What man hath understood it? Therein are set together spokes three hundred and sixty which in nowise can be loosened Ṛg. 1-164-48

It has been exed hepressed here that all the phenomena on the earth are going on under the wheel of year. It has twelve months, three hundred and sixty days with having three centres, Sky, Atmosphere and the earth. It indicates about the yearly cycle of the months and season. Under the wheel of year, the nature exhibits its functions.

The nature as mother

That breast of thine exhaustless spring of pleasure where with thou feeds all things that are choicest, Wealth giver treasure finder free bestower bring that Sarasvatī that we may drain it Ṛg. 1-164-49

The nature is the source of all pleasures and treasure of natural forces. She feed the creation just like the breast of mother feed the child with milk. She has been invoked to bestow knowledge to drain the natural resources from the nature.

The *Vāc*-speech energy has been invoked as *Sarasvatī*, she is the Goddess of wisdom and knowledge, it has been prayed that the *Vāc* speech nourishes the world like a mother, you are the treasure of jewels, give us the wisdom to drain it. The importance of the *Vāc*- speech energy has been indicated, through *Sarasvatī.*

The Bio-geo-chemical cycle

By means of sacrifice the Gods accomplished their sacrifice: these were the earliest ordinances. These Mighty ones attained the height of heaven there where the Sādhyas Gods of old are dwelling Ṛg.1-164-50

The *Yajña*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions are generated, where according to the cosmic law, *Deva* – fundamental particles are the first, with their activity they reach to the height of matter, and the fundamental particles- *Dev*a. It means initially the fundamental particles are the first in the series of action and interactions, through their activity they are converted into the matter and again reach to their original old state of *Deva* – fundamental particle, it indicates about the natural cycles, through which the natural components are synthesized and disintegrated in the reversible direction, through the bio-geo-chemical cycle in the nature.

The Hydrological Cycle

Uniform with the passing days this water mounts and falls again. The tempest clouds give life to earth and fires reanimate the heaven Ṛg. 1-164-51

The hydrological cycle, is regular feature on the earth. It has been indicated, that uniformly the water vapours rise, and falls again. The water clouds with thunder, give life to earth with rainfall, the heat energy reanimate the heaven. This hydrological cycle is source of life on the earth.

The Sarasvān-*Vāc*-Speech energy

The Bird celestial vast with noble pinion the lovely germ of plants the germ of waters, Him who delighteth us with rain in season Sarasvān I invoke that he may help us Ṛg.1-164-52

The supreme fundamental energy has been termed as Bird celestial, which is present in the plants as life-energy, and he is the germ of water, he with the rain, fertilize the earth with seasons, I invoke the *Sarasvān-* the *Vāc*-Speech energy for help.

The Infinite Supreme lord

Virāj (is) speech, Virāj earth, Virāj atmosphere, Virāj Prajāpati; Virāj became death, the over-king of the perfectible (sadhyas); in his control are what was, what is to be; let him put in my control what was, what is to be.Atharvaveda IX-10-24

It has been expressed that the potentiality of *Vāc*-speech energy is infinite, potentiality of the earth is infinite, potentiality of the universe is infinite, potentiality of *Prajāpati*-the lord of beings is infinite and accordingly the death on the earth's surface became infinite, the death is the over lord of all the materialistic world, in his control are what is and what is to be, let him put in my control, what was and what is to be *Atharvaveda IX-10-24*

It reflects the quest of the human mind to control over death and nature.

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8. Origin of Consciousness

The most important problem of the earth is origin of life. The Scientists are working on the problem round the cloak with unlimited expenditure. The Indus Valley civilization was scientifically developed. The problem of origin of life has been solved by the Indus Valley civilization with its literary evidences in the Vedic Science.

The life has evolved from a single cell with evolution.

The consciousness, and DNA, both are immortal with cell division.

a. Modern Concept

Modern researches in the field of origin of life have demonstrated the a-biotic formation of organic substances in the early pre-biological history of the earth A. I. Oparin (1922), J.B.S. Haldane (1928) and Bungen Burg de Jong (1929), they have suggested that in the primitive conditions, coaservates may get produced, as and when two hydrophilic colloidal solutions carrying opposite charges are being mixed.

A.I. Oparin (1968) has also suggested that photosynthetic activity can be promoted, when porphyrin is incorporated in the coaservates, this fact has been indicated by the metaphor '*cow from the skin'* in a symbolic manner.

Stanley Miller 1953 has demonstrated that under experimental conditions, the amino acids necessary for the building up of biological systems can be generated.

Now we are well acquainted with fact that first life has originated in water, and for existence of life on the earth, presence of ozone layer in the atmosphere is an essential factor, which absorbs the toxic ultra violet rays. Along with this the discovery of DNA double helix by Watson and Crick, the discovery of genetic code by Nirenberg, and genetic code combinations by A. Korenberg

have open new vista in the history of modern science. But the most important aspect of life is consciousness. What is consciousness? On this aspect, the modern science has no answer. On the contrary the Vedic texts have explained the origin and evolution of life on the earth in a similar fashion synonym to our knowledge of modern science. With one step ahead, they have traced evolution of the consciousness also.

b. Vedic cell biology - *Ṛbhu* - Cell

Matthias Schleiden and Theodor Schwann have proved first time that animals and plants are made up of cells. All the living organisms are made up of cells, at cellular level, they exhibit the same functions. It is the basis of our modern big biological discoveries.

In the Vedic terminology the cell has been termed as *Ṛbhu* and the different stages of the cell have been termed as *Ṛbhu, Ṛbhukṣ an, Vibhvan and Vāja.*

The Nucleus has been termed as *Bṛhaspati*, the DNA has been termed as *Tvaṣṭā and Vivasvat*, the cell division has been expressed as renewal of parents. The cell has been termed as *Ṛbhu*, literary it means Ṛ to move and bhu- to be, they follow each other and in succession they proceeds towards evolution. In the early primitive condition the consciousness-chetna has been appeared with the movements of the charged particles in side the closed

system of the coaservates. Accordingly with space, time and environmental conditions with evolution a prokaryotic cell came in to the existence with inherent quality of energy transformation, growth and multiplication with evolution. The development of the autotrophic cell with photosynthesis and genetic material has given the ways for the organic evolution on the earth.

In the modern biology, the life energy- consciousness has no place at present. Hence, it requires a special attention in particular.

c. Life energy– The consciousness - the life energy has been described as *Chetna*-consciousness, which appears at its own due to the movement of the charged particles in the initial stage and streaming movements of the protoplasm in the cell and it disappears with the ageing of the cells. The consciousness is a form of energy and it is the base of life, it can be defined as life principle related with the movement, with streaming movements of protoplasm life energy is generated, just like due to the spinning vibrations of electrons around the nucleus, magnetic energy is generated in the atom. The life is always connected with an organism and it appears from pre-existing cells only. Once the first cell body has taken its shape, it has maintained its continuity from generation to generation. The same has been expressed symbolically considering the *Ṛbhu*-cell as the celestial race with a source of organic matter just like wealth for the nature.

Generation of life energy-

The holy work I wrought before is wrought again: my sweetest hymn is sung to celebrate your praise. Here, O ye Ṛbhus, is this sea for all the Gods: sate you with Soma offered with the hallowing word Ṛg. *1-CX-1*

The *Ṛbhus* (cells) have been praised for their work and it has been said ''O ye *Ṛbhus*, *is this sea for all the Gods'',* it means for the natural forces the space in the cell is just like a vast ocean for their activity, which acts with the generation of magnetic life energy. The *Soma* represents magnetic life energy, which is generated within the cell due to the streaming of protoplasm in the cell. The same is the symbol of life in a cell, where natural metabolic reactions sate the cell with their activities.

The generation of life energy sate the cell on an easy path; it has been indicated by the metaphor of *Soma offered with hallowing word.* Where the cell is just like a vast sea for the activities of the natural components, with their functions, they gratify the cell with generation of life energy through vibrations. The sound of vibration has been expressed by the hallowing word and generation of life energy has been indicated by the *Soma* offered.

When seeking your enjoyment on ward from a far, ye came unto the home of liberal savitā.

Through the savitā the beginning of metabolic reactions has been

indicated Ṛg. 1-110- 2

Savitr gave you immortality, because ye came proclaiming him whom naught can hide. And this drinking- chalice of the Asura, which till that time was one ye made to be fourfold Ṛg. *1-110- 3*

Proclaiming him whom naught can hide.- It has been indicated that with generation of life energy, the *Ṛbhus* came in contact of sap-protoplasm and *savitā*-stimulator-enzymes; with this the generation of life energy with streaming of protoplasm and the metabolic reactions gave them immortality through cell division in a fourfold manner. It means once the generation of life energy has started in the cell body, it has maintained its continuity through cell division from generation to generation in a fourfold manner, it has been expressed in the words of *Ṛbhu- ye came proclaiming him whom naught can hide Ṛg.* 1-110- 3

The synthesis of chlorophyll and development of autotrophic nature has been indicated by cow from the skin. The cow is metaphor for nourishment and skin is for protoplasmic cell wall.

Life Energy- The life energy is symbol of consciousness in the living-beings, it is generated in the cell body at its own with streaming of protoplasm and disappear with the ageing of the cell body. The nature of the life energy is synonym to the energy generated in an atom due to the spinning vibrations of the electrons around the nucleus, it interconnect the cellular body in the same

fashion just as bond energy bind the atoms. It is a sort of magnetic energy the same has been described as *Som*a.

Evolution of the Life energy- Consciousness

The consciousness is a form of the fundamental energy. It generates at its own in side the closed system due to the movements of the charged particles, later on this function has been taken over by the protoplasmic streaming movements in side a cell. With the evolution of multi-cellular organisms the cells are inter-connected hence the consciousness is having a common appearance.

The evolution of the living-beings and their various forms are due to the evolution of the DNA base sequence with complexity of genetic code. It means for the whole external evolution of the living- beings DNA is the main genetic material, which through its genetic code maintain its continuity in the living-beings and carries the hereditary characters from one generation to another generation. In this way DNA on one hand regulates the course of life through the hereditary characters in the living-beings, and streaming of the protoplasm in the living cells provides it life-consciousness with the metabolic reactions as its food. It gets further strength through the movement of the sap in plants and circulation of blood in the animals. In human-beings and the higher animals it gets further strength with evolution through the

development of the nervous system. It means the movement of the sap in plants, circulation of the blood in the animals and the nervous system are the sources of the consciousness. They are related with the physical cell body, heart and the brain. These three centres work together, with the inactivity of any one centre the other two centres are also became inactive in succession. In the medical terminology it is known as physical death, cardiac arrest and coma. It means the human body has three centres of the consciousness. The physical cell body, it constitute one centre, the second one is heart, the electromagnetic activity of the heart can be measured by the ECG-Electro Cardiogram, the third one is the brain, its electromagnetic activity can be measured by EEG-Electro Encephalogram.

The three centres of the consciousness in the human body have been invoked for prosperity and used to worship of *Rudra* for welfare from the disease.

Tryambka we worship, sweet augmenter of prosperity.

As from its stem the cucumber, so may I be released from the death, not raft of immortality Ṛg.7-59-12

During life the three energies shows their impact in orderly sequence under cosmic principles and remain unaffected, it has been expressed with three rays.

Three with long tresses show in ordered season. One of them

sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure Ṛg. 1-164-44

The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy,** during the life it synthesizes the cellular body and the same disintegrate the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence under cosmic principles, it has been indicated in Ṛgveda.

The DNA present in the living-beings is responsible for the hereditary characters, and it has the genetic information about the events of life, in the form of genes and the genetic code, which decides the course of life in the living-beings. The consciousness is

only a spectator in the body, it regulates the cell body for its survival, accordingly under space, time and the environmental conditions, the cell body searched the means of adaptation in the nature.

Two birds with fair wings, knit with bonds of friendship, in the same sheltering tree have found refuge,

One of the twins eats the sweet Fig-tree's fruitage; the other eating not regardeth only.

The two birds are the vital and the supreme spirit, dwelling in one body. The vital spirit enjoys the fruit or rewards of actions while the supreme spirit is merely a spectator Ṛg. 1-164-20

The DNA leads the life in the body, through the hereditary characters. The same has been regarded as *Jīvātman* - BIO SOUL, and the other one is consciousness, which is synonym to the fundamental energy. The same is the supreme spirit in the body as spectator, commonly known as Soul, accordingly the Soul in the body and the fundamental energy (**GOD**) are one and the same. Hence in the *Upniṣads* it has been said that *Atma so Parmatma* means God and Soul are one. It is *Jīvātman*- bio soul (DNA), who bears the pains of life, which is immortal in the sense that it has maintained its continuity in the living-beings right from its first synthesis in side a cell and remains active through its off-springs. Hence DNA is the same from unicellular to multicellular

organisms with a change in its base sequence.

The differences, which we observe that the individual person concern are having different mentality and fate, it is due to the cycle of rebirth under the nature, where for every action there is a reaction it means every individual will have to face the consequences of his deeds with rebirth. After the death of the physical body the thought energy, which is imperishable remains in the universe, when the thought energy find its suitable language code on the duplicating DNA of the embryo, accordingly the language of the DNA open on the developing DNA, the language decides the fate of the individual as per his past deeds and the development of the physical body will be there as per the parental hereditary characters. Accordingly under the rebirth cycle evolution of the mental qualities from the animal instincts to the human instincts is the aim of life.

Where those fine Birds hymn ceaselessly their portion of life eternal, and the sacred synods, There is the Universe's mighty Keeper, he , wise, hath entered into me the simple Ṛg. 1-164-21

On the earth, the creatures enjoy the fruit of eternal life. The two birds (life energy and bio soul) are living in association with each other. The lord of the creatures has entered in to me. It has been indicated that the life energy and the supreme fundamental energy,

they are one and the same, which is present in the body as life energy. It has been indicated in an anthropomorphic manner.

The tree where on the fine Birds eat the sweetness, where they all rest and procreate their offspring- Upon its top they say the fig. is luscious: none gaineth it who knoweth not the father Ṛg. 1-164-22

It has been indicated that in the creation the beautiful creatures eat the sweet fruits of life. They enjoy the life and produces off-springs. At the peak of their life they say that fruit of life is luscious. But he, who knows not his generator father, for him all is useless.

The same has been depicted on the seal cat. No. 26 symbolically, where a human figure on the tree enjoying the fruit of life and the animal motif ṣ tiger looking over just like a spectator over its shoulder from below. The tiger represent the consciousness and the human figure represents *Jīvātman*- bio soul DNA De oxy ribose Nucleic Acid under the same sheltering tree (human body).

Consciousness in the human body

The nature of life energy has been indicated with reference to the human body.

The lotus flower of nine doors, covered with three strands (guṇa) - what soulful prodigy (yakṣa) is within it, that the Brāhama knower know Ath.10-8-43

The lotus flower of nine doors, it signifies human body, which has

nine outlets with three qualities, growth, reproduction and energy transformation. The presence of life energy has been indicated through *Yakṣa.*

Free from desire, wise (dhira), and immortal, self existent, satisfied with sap, not deficient in any respect- knowing that wise, un-ageing young soul, one is not afraid of death Ath.10-8-44

The presence of life energy has been expressed that life energy-consciousness is self-existent without desire, eternal, satisfied with the sap. It means the consciousness -life energy generates at its own, through the streaming of the sap for which the sap (water) is essential.

It means life energy- consciousness generates at its own due to the streaming of the protoplasm in the cell. In the multi cellular organisms, circulation of the blood and the nervous system assist it. In the plants movement of the sap assist it. With ageing of the concern organs and the cells the consciousness disappears. The hereditary character from the parents in the DNA regulates the lifecycle of an individual.

Electromagnetic energy

Both their father are also their son; both the chief are also the meanest (Kaniṣṭha) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

The presence of electromagnetic energy has been expressed

metaphorically.

The full from the full he bends up (ud-ac); the full is poured with the full; also that may we know today, whence that is poured out Ath. 10-8-29

This beautiful one (F) (is) un-ageing, an immortal in the house of a mortal; for whom she (was) made, he lies; he who made (her) grew old Ath. 10-8-26

The creation has been evolved from the fundamental energy under space, time and the environmental conditions. The fundamental energy is unborn, un-ageing, as an immortal it resides in the house of mortals. It has been expressed that the synthesised components of the nature like atom and cells are complete in them selves and as a mortal they under go deterioration with ageing. In the atom and the cell the fundamental energy resides as immortal. It has been indicated that with the reproductive capacity of the cells, the life energy became young through cell division and the old cells under go ageing.

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son. The electromagnetic energy is

present in the universe and at micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kaniṣṭha)*

d. Origin of life- the Prokaryotic Cell- *Ṛbhu*

1. For the celestial Race this song of praise which gives wealth lavishly Ṛg.1-20-1

The celestial race-cell, the *Ṛbhu-cell* has been praised as the divine class or race of the *Ṛbhus*, due to the fact that once the *Ṛbhu-cell* has developed, it has maintained its continuity through cell division. The three sons of *Sudhanvan*-developing coaservates, who is said to have been descendant of *Āngirasa* -viscous sap. They were named severally *Ṛbhu*-eldest-mature Cell-*Vibhvan-vigorous*, and *Vāja* is youngest (Young new cell). They are collectively called as *Ṛbhus* from the name of *Ṛbhu* due to their skilful good work for the living-beings, as they are the only source of organic matter on the earth. Hence they have been termed as celestial race, which is the source of organic matter without check.

TheṚbhu represents a mature cell, once it ha been synthesized in the nature, it maintains its continuity through the cell division, accordingly at the cellular level all the living organisms exhibits same functions in the nature. Hence the *Ṛbhu* has been described as the celestial race.

2. They who for Indra*, with their mind formed horses harnessed by a word, Attained by works to sacrifice.*

Colloidal system-How the *Ṛbhu*-cell initially came in to the existence? It has been indicated symbolically through mind, and the **horses harnessed by word** to take part in the creation sacrifice. In this way the appearance of the coaservate drops as closed primitive system with colloidal charged particles has been explained.

The formation of the charged particles in a hydrophilic colloidal system has been indicated by **Horses harnessed**. Where the *Indra* – electrical charge is the first, who has appeared with its +ive and ṣ ive charges, this phenomena is just like the words appear from mind and spread rapidly, in the same fashion the charged particles exhibit movements with generation of vibrating sound, the sound can be grasped by the electrostatic energy of the charged particles just like phonoatomic effect. It has generated the series of actions and interactions as a part of creation sacrifice.

Accordingly with movements of the charged particles and actions and inter actions in a closed system a primary cell body has taken its shape in early primitive condition.

3. They for the two Nāsatyas wrought a light rolling car moving every way: They formed a nectar yielding cow.

Oxidation and reduction-The coaservative drops in the primitive

condition has given the place for charged particles, showing movement just like light rolling car with movements in all directions. The two reactions oxidation and reduction have been expressed as two *Nāsatyas*. The energy generated due to these reactions have given the feed back to the drops, just like nourishment to the developing coaservates, it has been indicated by saying that they formed nectar yielding cow. The cow is metaphor for the nourishment.

The *sūdhanvan*-coaservates-literary it means with internal inherent source of energy.

(The two *Nāsatyas* is a name of an *Aśvins* - wonder workers and other is *Dasra*-wonder worker as destroyer, they have been considered as the horse of the *Indra and Aśvins*- nucleotide pairs of the DNA, it means the activity of the DNA is enhanced by oxidation and reduction reactions.)

4. The Ṛbhus *with effectual prayers, honest, with constant labour made, their Sire and Mother Young again.*

Multiplication- the renewal of the cells by multiplication has been expressed by saying that they made their parents young again.

To acquire the stage of multiplication, a considerable time period is necessary. It has been indicated by *effectual prayers, honest and constant labour*. Accordingly the process of synthesis with multiplication has been started with feed back of oxidation and

reduction reactions,

The same has been indicated through the metaphor that they made *their Sire and Mother Young again.*

5. Together came your gladdening drops with Indra by the Maruts girt, with the Ādityas, with the Kings.

Ageing-Accordingly with time under natural conditions gladdening drop appear with the charged activities of *Indra*-Electricity, water and *Ādityas*- (twelve month). The appearance of gladdening drop reveals the fact that together with Indra, water and time the coaservate under go ageing.

It indicates about the beginning of the prokaryotic cell in the nature.

6. the sacrifice ladle, wrought newly by the God Tvaṣṭā's hand (DNA) Four ladles have ye made thereof.

Cell division-The sacrificial ladles (developing cell) was made new by *Tvaṣṭā*- with four ladle.

The synthesis of the genetic material with time has been expressed by *Tvaṣṭā* -DNA

Tvaṣṭā- is a term for genetic material, it means first genetic material has been synthesized in side the cell, it has given the capacity for cell division during the primitive anaerobic conditions and in turn the cell has been divided in to four.

It indicates that the genetic material has been synthesized in the cell.

7. Vouchsafe us wealth, to him who pours thrice seven libations, ye to each. Give wealth, pleased with our eulogies.

The nature-Accordingly with time the nature became enriched with organic matter and gases. It has been expressed in a anthropomorphic manner symbolically, as if nature is asking to the *Ṛbhus* to give wealth of organic matter and gases to the nature, who is providing thrice seven libations-thrice seven fuels, they are five major elements, twelve *Āditya* (twelve months), three atmospheric layers and life energy.

They operate for the safety of the prokaryotic cell in the nature. It has been indicated that with the development of the coaservate in to a prokaryotic cell body, the cell enter in to the control of natural forces and the cells became the source of organic matter and gases in the nature. It has been indicated symbolically in an anthropomorphic manner through asking them *Give wealth, pleased with our eulogies*.

8. As ministering Priests they held, by pious acts they won themselves, A share in sacrifice with Gods.

The self acquired status in the nature. It means with their function in the nature, the *Ṛbhus* them selves have acquired the status just like a priest with a share in the nature along with the

natural forces.

The infinite nature- it has been indicated that with the formation of the prokaryotic cell in the nature, the *Ṛbhus*- cells became the source of nutrients in the nature along with the natural forces. Accordingly the function of *Ṛbhus* is just like priest in the creation sacrifice, they initiate the process of evolution of infinite nature with exchange of gases in the atmosphere and addition of organic matter. It is their share in the creation sacrifice, hence the *Ṛbhus* have been mentioned just like as ministering priest.

In this fashion the process of evolution being initiated with the formation of a prokaryotic cell

e. Autotrophic Ṛbhu- cell

The most important event for life on the earth is generation of life energy and conversion of light energy in to the chemical energy by chlorophyll. The generation of life energy and synthesis of chlorophyll in the early primitive condition has been indicated by addressing to the eukaryotic *Ṛbhu* in an anthropomorphic manner in a symbolic fashion.

Generation of life energy

The holy work I wrought before is wrought again: my sweetest hymn is sung to celebrate your praise. Here, O ye Ṛbhus, is this sea for all the Gods: sate you with Soma offered with the hallowing word Ṛg. 1-XL-1

The *Ṛbhus* (cells) have been praised for their work and it has been said ''O ye *Ṛbhus*, *is this sea for all the Gods'',* it means for the natural forces the space in the cell is just like a vast ocean for their activity, which acts with the generation of magnetic life energy. The *Soma* represents magnetic life energy, which is being generated within the cell due to the movements of electrons in side a closed system and due to the streaming of protoplasm in the cell. The same is the symbol of life in a cell, where natural metabolic reactions sate the cell with their activities.

The generation of life energy sate the cell on an easy path; it has been indicated by the metaphor of *Soma offered with hallowing word,* where the cell is just like a vast sea for the activities of the natural components, with their functions, they gratify the cell with generation of life energy through vibrations. The sound of vibration has been expressed by the hallowing word and generation of life energy has been indicated by the *Soma* offered.

2. When seeking your enjoyment onward from afar, ye, certain of my kinsmen, wandered on your way,

Sons of Sudhanvan, after your long journeying, ye came unto the

home of liberal Savitā Ṛg. 1-110-2

It has been indicated that with generation of life energy, the sudhanvan's sons-prokaryotic cells were moving on their path of development, the formation of the viscous sap has been indicated by the kinsmen-*Āṅgiras*-sap, from him the *Ṛbhu* have descended. During this long journey, they came in to the home of liberal *Savitā*, the *Savitā* gave them immortality.

3. Savitr gave you immortality, because ye came proclaiming him whom naught can hide. And this drinking- chalice of the Asura, which till that time was one; ye made to be fourfold Ṛg. 1-110- 3

proclaiming him whom naught can hide.- It has been indicated that with generation of life energy, the *Ṛbhus* came in contact of sap-protoplasm and *Savitā*-stimulator-enzymes; with this the generation of life energy with streaming of protoplasm and the metabolic reactions gave them immortality through cell division in a fourfold manner. It means once the generation of life energy has started in the cell body, it has maintained its continuity through cell division from generation to generation in a fourfold manner, it has been expressed in the words of *Ṛbhu- ye came proclaiming him whom naught can hide Ṛg. 1-110- 3*

The synthesis of chlorophyll and development of autotrophic nature has been indicated by cow from the skin. The cow is metaphor for nourishment and skin is for protoplasmic cell wall.

Life Energy- The life energy is symbol of consciousness in the living beings, it is generated in the cell body at its own with streaming of protoplasm and disappear with the ageing of the cell body. The nature of the life energy is synonym to the energy generated in an atom due to the spinning vibrations of the electrons around the nucleus, it interconnect the cellular body in the same fashion just as bond energy bind the atoms. It is a sort of magnetic energy the same has been described as *Soma*.

8. Out of skin, O *Ṛbhu*s*, once ye formed a cow, and brought the mother close unto her calf again. Sons of* Sudhanvan*, Heroes, with surpassing skill ye made your aged parents youthful as before Ṛg. 1-CX-1*

Chlorophyll- The synthesis of chlorophyll from the outer wall of the cell has been indicated by saying ''out of skin *they formed a cow, and brought the mother close unto her calf again,*'' the cow is a symbol of nourishment, which feed the child with her milk just like a mother. The *Ṛbhu* cell under go ageing with consumption of food, to check this, the *Ṛbhu* has synthesized the chlorophyll pigments from outer wall of the cell at their own; in turn the cell became young with supply of food material through photosynthesis. In this way the young cells get the nourishment, and the source of nourishment became close to them, just like a mother came close to her calf again. It means with the

development of autotrophic nature and cell division, the ageing cells became young. It has been indicated by ''*Ṛbhus*, *ye made your aged parents youthful as before.''* the daughter cells have been termed as young parents.

f. Development of Eukaryotic cell- *Ṛbhu*-

6. Indra hath yoked his Bays, the Aśvin's car is horsed; Bṛhaspati hath brought the Cow of every hue. Ye went as Ṛbhu, Vibhvan, Vāja to the Gods Rg. 1-161-6

For the further evolution Bays of *Indra*, electromagnetic energy carries it towards the evolution. It has given it a push for further evolution. The *Aśvin's* car is horsed, it means the oxidation and reduction reactions came in to their full functions and *the Bṛhaspati* (nucleus) brought the cow of every hue, the cow is metaphor for the organic matter in the living-beings. It means through the regulation of the metabolic reactions and the genetic material has brought biodiversity in nature, where every cellular organism acting as food for the other through food chains and food webs in the nature. It has been expressed as **cow of every hue,** where plants are primary producers and animals are secondary producers. The cow is a metaphor for nourishment. Accordingly the cells have acquired different stages as *Ṛbhu*, *Vibhvan*, and *Vāja*

during their life cycle. These three represents three stages of a cell as young, vigorous and old, their functions are under the natural factors.

7. Ye by your wisdom brought a cow from out a hide; un to that ancient Pair ye gave again their youth. Out of a horse, Sudhanvan's Sons, ye formed a horse: a chariot ye equipped and went unto the Gods Ṛg. 1-161-7

f. Horse out of a horse - in the next step of evolution, the Ṛbhus (cells) have developed a self nourishment system, through the development of proto-chlorophyll in the primitive condition the same has been indicated through the 'Cow from the skin.' The cow is metaphor for nourishment, which acts as a horse and the cell became well equipped and young. It means in the primitive conditions, genetic material as RNA or DNA first has been synthesized in side a closed system, then with time proto-chlorophyll has synthesized from the cell wall, (In the primary conditions some compounds may have been deposited on the surface of the cells, which in turn may have given the way for the development of the cell-wall and proto-chlorophyll with time). The synthesis of proto-chlorophyll from DNA has acted as a horsepower for the evolution, accordingly it has been said ''Ye (*Ṛbhu*) brought a horse out of a horse.'' It means the DNA - genetic material and chlorophyll are like a horsepower for the

Ṛbhus-cell. Thus the cell became resistant to survive in the nature through the cell division.

g. The life on the earth

The first life has originated on the earth in the water. The life is associated with three events in the life cycle, birth, life and death under the cosmic principles. Now it is a scientific fact that life on the earth is very much supported by the ozone layer in the atmosphere, for the life water is essential, and the triplet code of DNA with triple bond of hydrogen, regulate the life cycle with hereditary characters. All these facts about the life have been expressed symbolically addressing to the *Ṛbhu*-cell in an anthropomorphic manner.

The first cell has been synthesized in the seawater and has been termed as *Ṛbhu.* It has been expressed symbolically by asking a question in an anthropomorphic manner to *Ṛbhu-cell.*

1. What time, first springing in to life, thou neighed, proceeding from the sea or upper waters,

Limbs of the deer hadst thou, and eagle pinions, O steed, thy birth is high and must be lauded. Ṛg. 1-163-1

It has been asked that at what time the *Ṛbhu* has sprang in to life, the answer has been given that life has originated first in sea or in

upper water. The life energy is having a speed like an eagle or Deer. The birth of life is very high, it must be lauded.

2. This steed which, Yama gave hath Trita harnessed, and him, the first of all, hath Indra mounted.
His bridle the Gandharva grasped. O Vasus, from out the Sun ye fashioned forth the Courser Ṛg. 1-163-2

It has been expressed that the steed of life is *Trita* harnessed, which has been given by *Yama*, it is an indication towards the three stages of life- childhood, young and old age. The *Yama* represents chromosome, the chromosomes have the information for the development of the physical body, as such it has been said that it has been given by *Yama*, the life has been first mounted by *Indra. The Indra* represents electricity, in the early stages due to the movements of the charged particles in the developing coaservates, the life energy has been generated, hence it has been said that *Indra* has mounted first. It has been grasped by *Gandharva* as bridle, the *Gandharva* represents viscous mass of protoplasm, due to the streaming movements of the protoplasm life energy has its existence in the cell, when streaming get blocked, the life energy disappear, hence it has been said that the life energy has been grasped by the *Gandharva* as bridle, where bridle is

metaphor for the life energy. *O Vasus*, it is an expression for the a-biotic substances, which have synthesized the *Ṛbhu*- cell in the water first, The sun is the main energy source on the earth, hence it has been said that the Courser-the cell has been fashioned by the sun.

3. Yama art thou, O horse; thou art Āditya; Trita art thou by secret operation.
Thou art divided thoroughly from Soma. They say thou hast three bonds in heaven that hold thee Ṛg. 1-163-3

Yama art thou, O horse; thou art *Āditya*; Trita art thou *Ṛbhu*-cell in by secret operation. Due to the vigorous nature of the nature, the *Ṛbhu* has been called as Steed metaphorically, which is taking part in the creation sacrifice, it came in to the existence from the *Yama*-chromosome and due to the twelve *Āditya*-twelve months under temperature pressure gradient, hence it has been said that thou art *Yama*, thou art *Āditya,* Trita art thou by secret operation, - it indicate about the synthesis of *Ṛbhu*-cell due to the Triple bond of the nucleotide pairs of the DNA. The genetic material, DNA has the information for the synthesis of the cell body. It bears the hereditary characters to synthesize the cell in nature.
Thou art divided thoroughly from Soma it means the whole

synthesis is due to the *Soma*- magnetic energy, they say thou hast three bonds in heaven, which hold thee, it means Ozone layer in the atmosphere, which absorbs the ultra violet rays and due to which life is present on the earth.

4. Three bonds, they say, thou hast in heaven that bind thee, three in the waters, three within the ocean.
To me thou seems Varuṇa, O Courser there where they say is thy sublimate birth place Ṛg. 1-163-4

It has been expressed that *Ṛbhu*-cell has three bonds in heaven, it represents ozone layer in the atmosphere, due to the presence of Ozone layer in the upper atmosphere life is present on the earth, because the Ozone layer absorbs the high energetic ultraviolet rays, and only visible light come on the earth's surface, three bonds in the water, it means two hydrogen and a single atom of oxygen, they constitute the water molecule, the water is a life resource for the *Ṛbhu*-cell, three bonds within the ocean, it means in the ocean of biological world of life, the *Trita* triple bond of the nucleotide pair is main source of the development.

To me thou seems *Varuṇa, the Ṛbhu* seems like *Varuṇa*, it indicates that the cellular mass came in to the existence due to gravity and aggregation of the materialistic substances as a

sublimate unit, where the Courser- life energy has its birth place, due to the streaming of the protoplasm in the cell.

In this way in a symbolic fashion the generation of life energy in the cell has been expressed.

To day we know the fact that water is life resource, ozone layer protects the life on the earth, and DNA is responsible for biodiversity in the nature. The same has been indicated.

The Organic Evolution

10. One downward to the water drives the crippled cow, other trims the flesh brought on the carving board.

One carries off the refuse at the set of sun. How did the Parents aid their children in their task?

The Organic Evolution- The evolution proceeds forward in the nature under space, time and environmental conditions with the origin of life- consciousness.

The organic evolution on the earth is related with the ecological succession, with the development of the eukaryotic autotrophic cell. Where photosynthesis on one hand is responsible for the development of the carbon skeleton and DNA is responsible for the genetic modification with multiplication and successive evolution. The consciousness has also shown its evolution

simultaneously, with species diversity and complexity in the nature, with modification of the physical environment.

The evolution proceeds forward under Ecological and Physiological Principles - The principles have been explained metaphorically in an anthropomorphic manner.

The consciousness and origin of life

The consciousness is a symbol of existence. It has evolved from the primordial consciousness that emerges from quarks with the formation of subatomic particles, atom, molecules, and matter.

The DNA is universal identity of the living-beings, with the synthesis of DNA molecule, the primordial consciousness evolve into neuron based consciousness. It is higher degree of consciousness, and human species is on the top of consciousness.

The DNA molecule has ability to give rise to all degrees of cellular and neuron-based consciousness. With the genetic recombination the genome-dependent complexity has evolved. **The DNA is immortal instrument with all information of life and death with hereditary characters.**

The sense organs and the brain are the vehicles of DNA. They

execute the functions with thought and memory stored in DNA, and records the actions in the life till death. As soon as the fertilized DNA divide, a language code open on the DNA, which is the code for the mental development of the brain, the mental code is specific, which attract the specific thought energy resting in the sky, if the mental code and thought energy are complimentary with each other, than the thought energy of an individual tie down with the DNA, and open the language code on the DNA, with the past memory of an individual. Due to the fresh encoding, the past memories suppressed, it gives the unusual experiences. The immortal words is the identity of self with this the DNA decides the fate with consciousness.

The life energy is associated with consciousness, it appears at its own due to the movement of the charged particles in the initial stage and streaming movements of the protoplasm in the cell .It disappears with the ageing of the cells. It is the life principle, which gives the feeling of existence. It is supported by the metabolic reactions and the source of consciousness for the DNA, which regulate the life. **it is just like sublimation in nature.**

The consciousness is the main source of function in the body, it has generated first in the coaservate with the movement of the

charged particles and vibratory sound of the vibrations of ions in the closed system.

It is a phonetically motivated action, the phonetic vibrations have created phonetic affects with the synthesis of genetic material with time, It has maintained its continuity with cell division, and synthesis of proto-chlorophyll. The oxidation and reduction reactions have pushed the developing cell on the path of evolution.

The sound of vibrations of the ions of the colloidal system is the original source of the life consciousness. The immortal sound energy of words is the stimulator of language on the DNA with evolution

Conclusion

The consciousness is the main source of function in the body, it has generated first in the coaservate with the movement of the charged particles and vibratory sound of the vibrations of ions in the closed system. It is a phonetically motivated action, the phonetic vibrations have created phonetic affects with the synthesis of genetic material with time, It has maintained its continuity with cell division, and synthesis of proto-chlorophyll. The oxidation and reduction reactions have pushed the developing

cell on the path of evolution.

The beginning of the photosynthesis with recombination of the genetic material has opened the door for the organic evolution on the earth with modification of the physical environment and biodiversity in nature.

The development of the sense organs and the brain has imparted the faculty of expressions of the thoughts in an advance form of words and actions. The words are complimentary action of thought in the brain, the words are immortal, and it is the identity of an individual in life as well as after death also. After the death of the physical body the words remains in the universe. They search the instrument for operation. When they find the complimentary thought code on the duplicating DNA in the womb, they tie down with the DNA, and open the language of thought mentality of an individual. Accordingly this language of the DNA decides the fate in life.

It has been concluded that the imperishable sound of words and the eye sight is the source, which stimulate the function of DNA. The brain is the instrument to execute the function till life consciousness is present. The consciousness is hereditary life

principle, supported by food metabolism, and the immortal DNA is complimentary instrument of immortal thought words, they stimulate the language of the DNA from generation to generation. The memory of past birth is suppressed due to the fresh encoding on the DNA,

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The present findings may give new direction to think over the origin of life, and consciousness. The DNA is the light of life. It is the vehicle of merits and demerits from generation to generation. It will give new direction for thinking that why the time twins have different fate?

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9. Photo-synthesis

Wedding of Sūryā's Daughter - *Aryaman*

The photosynthesis is a process, during which the green plants synthesize glucose as food material from the atmospheric carbon di oxide and water in the presence of chlorophyll and light. During this process the transformation of the light energy in to the chemical energy is there, which is the source of life and food for the living organisms. Today it is also a fact that all the complex organic substances are the products of the glucose metabolism in side the cell. It is a unique event in the history of origin of life on the earth. It is the only source of the chemical energy and carbon skeleton of the living-beings on the earth.

The process of the photosynthesis has been described through the metaphor of the marriage ceremony in the wedding hymns of the *Ṛgveda 10-85* having 47 verses and Atharvaveda book 14 divided it in to two *anuvāka*, the first with 64 verses and second with 75 verses. Both have same contents, but Atharvaveda has more details.

The marriage is an important event in the life of a human-being. Through the marriage a young girl under go a transformation. She enters in to a new house as a wife with her husband so as to produce off-springs. After marriage, she became the member of her husband's family.

In the same fashion light energy under go transformation through photosynthesis into the chemical energy, it never returns to its parental source sun, and enter into a cell body as a new house for its dwelling with synthesis of organic carbon (glucose) through photosynthesis.

The photosynthesis lead it to produce glucose and the products of the glucose are just like its off-springs. Through the ceremonial process and the wedding hymns of the marriage, the whole process of the photosynthesis has been described in a symbolic fashion metaphorically. It is synonym to our modern knowledge. As we

know today, through the achievements of the modern science in the field of Biophysics.

In the nature evolution of the living-beings is due to the DNA-genetic modification with mutation and evolution through hybridisation. The development of the carbon skeleton is due to the chlorophyll through photosynthesis, which is the source of food (Glucose) for the living- beings.

In this way the synthesis of the physical cell body has been described, how it proceeds towards further evolution, it has been indicated symbolically through Ecological succession in the nature Ṛg.1-161

The Photosynthesis has been indicated metaphorically through a riddle.

Photosynthesis- Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot Ṛg. 1-164-7

The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth's surface from the head of the sun. These rays are trapped by the plants for the photosynthesis, which acts as milk-food *(kṣhir*) through nourishment for the living-beings hence the visible rays of the sun have been compared with the milk and

plant as kine. The absorption of the water by the green plant has been indicated symbolically through the drinking of water with the foot Ṛg.1-164-7 Due to the photosynthesis the life-consciousness has its existence on the earth. The carbon skeleton of the living-beings and its organic evolution is directly related with the photosynthesis.

We can interpret the symbolic expression about the process of photosynthesis in the wedding hymn, if we are acquainted with the Vedic terminology. The wheel of the sun is *sūryā's* bridal car. *Nārāśaṁs* is the short blue wavelength of light and *Aryaman*-th long red wavelength of light. *Bhag* is the photosynthetic pigment, *Aśvin* is nucleotide pair of DNA, *Savitā* is stimulator, who stimulate the light rays through change in temperature pressure gradient as well as it represents enzymes, who stimulate biochemical reactions. Arya*m*an is bride (long red wavelength of light); *Bhag* is the pigment of the cell, in the cell the long red wavelength of light is going to enter as a wife. The *Soma* is bride seeker, he first accept the light energy. During the transformation of the light energy, it under go purification through release of the extra energy, as soon as it enters in to the system. The high energetic rays are toxic, which have been expressed through witchcraft's infection and harsh, sharp barbed poison, when its energy gets lower down it became blue- red than it enter in to the

third step. When it approaches finally for the transformation, it releases its excess energy in the three stages. Hence the light energy has been termed as thrice purified (*Apala*) at the meta-triplet state of the exited electrons. Importance of the water molecule has been expressed through the water for bathing for bride.

After the transformation, as soon as the chemical energy is produced. It is said that *Bhag* has grasped thy hand and *Savitā* has grasped thy hand, it means the pigments and the enzymes have accepted it and her husband is glucose, *Tvaṣṭā* (DNA) has given garment for the beauty, it means synthesis of protein, through which it acquires different forms and shapes in the living-beings and in the fossil fuels. It is its immortal character. It has been expressed by saying *becoming obedient (anuvrata) to thy husband; gird thyself in order to immortality.* It means after transformation of the light energy into the chemical energy, the chemical energy became immortal in association with organic carbon. They move in the ecosystem through oxidation and reduction reactions in a cyclic manner, it has been indicated by ''*these two move one after the other by magic these two sporting young ones'' Ath. XIV-1-23, 24*

During the process *Indra*, *Agni* (Electromagnetic energy), heaven and earth, *Mātariśvan* (CO_2), *Mitra* (light),*Varuṇa* (gravity),

Maruts (Water clouds) *Bhag* (the pigment), *Aśvin* (morning-evening), nucleotide pair of DNA and *Bṛhaspati* (nucleus).These are the factors, which control the photosynthesis. Indication towards the reduction of the carbon di oxide has been given through ten intermediate products as ten sons and glucose as an eleventh man.

The *Bhag* has fashioned the four feet, these are the four steps during the process of photosynthesis, which involve the carbon di oxide Co_2, water and the synthesis of glucose with release of oxygen O_2

$$6Co_{2+}\ 6H_2O = \text{Glucose } (C_6H_{12}O6) \text{ and Oxygen } (O_2)$$

Bhag has fashioned the four frames- pieces, and the *Tvaṣṭā* adorned the straps, it indicates about the formation of the DNA base pairs with four bases (Adenine=Thymine, Guanine≡Cytosine, Thymine=Adenine and Cytosine≡ Guanine.). ''On the God made road (natural path) this bridal car is well flowered,'' it means it is a self-sufficient system, where the transcription and translation are the two pillars on her natural path. The same has been expressed as a maiden and -two pillars. In the end of the wedding hymn it has been expressed that all Gods (the natural forces) have united us of one accord by heart, *Apāh* (water), *Mātariśvan* (CO_2), *Dhāta* (sun) and *Sarasvatī* (*Vac* - energy) may unite us. Here it has been indicated that during the process of the photosynthesis Water,

carbon di oxide and sun-rays are important, which has given the way for the union (glucose), where carbon di oxide is converted in to the glucose with chemical energy within it.

Through the wedding, it has been indicated that the glucose with the chemical energy within it is the primary source of the carbon skeleton, and the evolution of the living-beings on the earth. The functions going on in the nature during the evolution, and the formation of the complex food webs and food chains, have been indicated symbolically in an anthropomorphic manner. According to the relative importance of the component in a particular stage, they have been addressed symbolically. The obstacles and the factors, which influence the process have been indicated also in a symbolic fashion through the family relationship of the glucose and the chemical energy with their importance in the nature, through the role of a husband and the wife as a social family member metaphorically. During the journey of the assimilated carbon in the nature, the various nitrogenous and carbon products have been termed as their off-spring metaphorically.

Importance of the Soma-magnetic energy

In the wedding hymn it has been expressed that under the cosmic principles. The *soma* is set in the sky, due to the *soma*, sun has been established in the sky, due to the *soma* the *Ādityas* are strong

and earth is mighty; like wise in the midst of asterism *soma* has been placed. It has been also indicated here that *soma* is not a plant or moon but an energy, which no one ever tastes. The *soma* represents magnetic energy, According to the principles of modern Astronomy. The magnetic energy can be generated due to the movements of the electrons in side an atom and in all the Astronomical bodies, who are moving at their axis, as due to the movement at their axis, a dynamo is being developed in their centre. Due to this all the rotating astronomical bodies have their own magnetic field and the magnetosphere around them. The position and the importance of the sun, earth and other planets in the universe are due to their magnetic field and the magnetosphere. The interplanetary space is filled with the interplanetary magnetic field. Along with this due to the movements of electrons around the nucleus, the magnetic energy generates. It is associated with the electrostatic energy of the nucleus and produces the bond energy, it bind the atoms and molecules through the bonds. In the living-beings due to the streaming movements of the protoplasm, the magnetic energy is generated, which is responsible for the origin of life. Hence it has been expressed that *soma* (magnetic energy) is present every where. Accordingly in the wedding hymn first of all *soma* has been appreciated. It has been said that *soma* is the bride seeker. It is due to the presence of *soma*- magnetic energy in the living cells, which is also the house in which the

sun's light energy is going to enter for the transformation. The presence of magnetosphere around the planets has been indicated by *Guarded by covering-arrangements* symbolically Atharvaveda XIV.1.1-5

Guarded by covering-arrangements, defended by watchmen (?? bārhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee.

By truth is the earth established (ut-stabh); by the sun is the eskestablished; by righteousness the Ādityas stand; Soma is set (śrita) upon the sky.

2. By Soma are the Âdityas strong; by Soma is the earth great; likewise in the lap of these asterisms is Soma placed (a-dha).

3. One thinks himself to have drunk Soma when they crush up an herb; what Soma the priests (brāhmaṇa know, of that no earthly man partakes.

4 .When, O Soma, they drink thee (up), then thou fillest thyself up again ; Vāyu is Soma's defender ; the month is norm (ākṛti) of the years (sāma).

5. Guarded by covering-arrangements, defended by watchmen (?? barhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee.

Journey of the solar rays

After describing the importance of the *soma,* the journey of the

solar rays from the sun to the earth's surface has been indicated through *raibhi* and *Gātha*.

When, the *Sūryā* daughter went to her husband, here the wheel of the sun is its bridal-car. The solar flares have been described as *the Sūryā's* excellent garment, as and when the solar wind passes through the sky. The high energetic solar wind waves make noise. The movement of the solar particles looks like that as if they are dancing. It has been expressed through *raibhi* and *Gātha* metaphorically.

Long and short wavelength of light

The *Nārśams* is her younger sister. She represents a short blue wavelength of light Ṛg. 10- 85-6.Ath.XIV-1-17.The *Aryaman* is long red wavelength of light. She has been expressed as husband finder bride symbolically.

The sun's wheel is its bridal car on which the sun is coming to give his daughter to her husband. The seven visible rays are the seven sisters, the *Nārśaṁs* is younger sister. It means the short blue wavelength of light .The *Aryaman* is long red wavelength of light, the *Aryaman* is important for conversion of the light energy into the chemical energy. The husband's house is a cell, where she is going to enter as a wife to unite with her husband (CO_2), so as to

form a union with her husband (glucose). It is the source of off-springs (products). The house where she is going to produce progeny is guarded by *the Soma* -magnetic energy, *Mitra* - light, *Varuṇa* - gravity and *the Indra* - electrostatic energy. *Tvaṣṭā*- help her to produce *Viśvarupa*- (The various forms of the living-beings) Ṛg.10.85, (*Atharva-veda 14-1 and 2*).

Chlorophyll

Importance of the chlorophyll has been discussed under the name of *Avi*-protector and *Parṇa maṇi in the Ath*arva-veda., In the *Ṛgveda* its presence has been indicated under the name of *Bhṛgu.*

The deity, *Avi* by name, sits enveloped with right; by her form these trees are green garlanded. Atharva-veda X -8-31-1

As 'twere some goodly treasure Mātriśvan brought as a gift to Bhṛgu Ṛg.*1- LX-1*

The Mātriśvan CO_2 has brought down from heaven to earth, which is a gift to *Bhṛgu* (chlorophyll), it means the gift is for photosynthesis.

It reflects about the knowledge and importance of the chlorophyll and the carbon di oxide for the living-beings.

We make offering to *Aryaman* of good connections, husband-

finder; like a gourd from its bond, from here I release thee not from yonder. A. XIV-1-17

Brides-men, *Aśvins* represents- nucleotide pars of DNA, *Agni* -heat energy has been described as the forerunner, *Savitā* is stimulator. It means the process is stimulated with the changes in the temperature- pressure gradient.

When the Sūryā approaches her husband's home, his two draft oxen were white. -when the electromagnetic energy approach for the carbon assimilation, they have white visible light, it has been indicated.

Mind was her cart; heaven also was [its] canopy; the two draft-oxen were white (śukra), when Sūryā went to her husband. Ath.XIV- 1-10

It is the indication of the **white visible light**, as and when the sun rays reaches on the earth they have white colour.

6. Intention (citti) was the pillow, sight was the ointment, heaven [and] earth were the coffer (kośa), when Sūryā went to her husband.

It has been expressed symbolically that during the journey of sun rays from sun to earth, the atmosphere and the earth are just like coffer - *kośa*

7. The raibhī was the parting [song] (??Anudeyī), the naracansi

was the welcoming one (? Nyocanī); Sūryā's garment verily was excellent; she goes adorned with song (gatha).

Sūryā's garment verily was excellent; *the structure of solar flares has been indicated.* The high energetic solar wind wave makes noise. The movement of the solar particles looks like that as if they are dancing. It has been expressed through *raibhi* and *Gātha* metaphorically. The types of solar rays has been expressed by *Anudeyī nārāśansi and Nyocanī*

8. The laudations (stoma) were the cross-pieces (?? Pratidhi) ; meter was the kurira, the opaca ; of Sūryā the Aśvins were the wooers, Agni was the forerunner.

It has been expressed that during the journey of the solar rays from sun to earth the Agni - heat energy was the forerunner and *Aśvins* - nucleotide pairs of DNA are the archtect of the food chains and food webs.

9. Soma was the bride-seeker; both Aśvins were wooers, when Savitā gave to her husband Sūryā, praising (cans) with her mind.

10. Mind was her cart; heaven also was [its] canopy; the two draft-oxen were white (śukra), when Sūryā went to her husband.

Ath.XIV- 1- 6 to 10.1

It has been expressed that when *savita* - stimulator has stimulated

the process of transformation, soma was bride-seeker, it means magnetic energy of the cell has first accepted it and both *Aśvins*-nucleotide pairs of DNA are the architect of the process of assimilation. The two draft-oxen were white (cukra), when the electromagnetic energy approach for the carbon assimilation, they have white visible light, it has been indicated.

Importance of the Ozone layer

During the course of the sun light from the sky to the earth, the ultra violet rays are absorbed by the ozone layer in the upper atmosphere. This fact has been indicated through asking a question to the *Aśvins*

'With your three wheeled chariot, to Sūryā's bridal. Where was one wheel of yours'' Ath XIV-1-14,16

''The two wheels of thee, O Sūryā, the priests know, the one wheel that is in secret - which verily, the enlightened know.

The course of the solar rays from the sky to earth has three stages.

The three steps have been expressed as the three wheels. The first step is in the sky, where the sun rays generates due to the nuclear reactions at the surface of the sun. The second step is sun's visible light on the earth's surface. These are the two common steps known to all. The third invisible step is in the atmosphere, where ozone layer absorbs the toxic ultra violet rays. The same has been indicated as the one wheel that is in secret.

11. Haltered with verse (ic) and chant (saman), thy two oxen went peaceful (? samana); ears were thy (two) wheels; in the sky the wandering track.

The course of the solar rays has been expressed.

12. Clean were the (two) wheels of thee as thou wentest; out breath-ing (vyana) was the inserted axle; a cart made of mind did Sūrya ascend when going forth to her husband.

13. The bridal (vahatu) of Sūryā, which Savitā sent off (ava-srj) has gone forth; in the Maghas are slain the kine; in the Phalgunis is the wedding.

It has been indicated that *Maghas*- cold months inactivate the process and *Phalgunis*- hot seasons activate the process.

14. When, O Aśvins, ye went asking, with your three-wheeled [chariot], to Sūryā's bridal, where was one wheel of yours? Where stood ye for pointing out?

15. When ye went, O lords of beauty, unto the wooing of Sūryā, all the gods assented to that [deed] of yours; Pūṣan as son chose a father.

It has been expressed symbolically that through the carbon assimilation, it is just like that the *pūṣan*- sun rays has chosen the father in the form of organic carbon.

16. The two wheels of thee, O Sūryā, the priests (brahmaṅ) know seasonably ; further, the one wheel that is in secret - that, verily, the enlightened (addhati) know.1

Let what is dear succeed (sam-rdh) here for thy progeny; watch thou over this house in order to housewife-ship; mingle thy self (tanu) with this husband; then shall thou in advanced age speak to the council. 21.2

After the absorption of the UV Rays by the Ozone layer the visible light enter in to the earth's atmosphere. The visible light is important for the photosynthesis. It has been indicated symbolically that ***Aryaman*** **red wavelength of light is husband finder.** I release thee just like a gourd from its bond. It has been addressed to the long red wavelength of light to watch over the house (cell) for housewife-ship.

17. We make offering to Aryaman of good connections, husband-finder; like a gourd from its bond, from here I release, not from

yonder.

18. I release [her] from here, not from yonder; I make her well-bound yonder, that she, O gracious Indra, may be rich in sons, well-portioned.

19. I release thee from Varuṇa's fetter, with which the very propitious Savitā bound thee; in the lair (yoni) of righteousness, in the wooer (-sambhala).

20. Let Bhaga lead thee hence, grasping thy hand; let the Aśvins carry thee forth by a chariot; go to the houses, that mayest be housewife ; thou, having control, shall speak unto the council.1

Light Reaction

The photosynthesis has two main reactions, the light reaction and dark reaction. It is during the light reaction that the sunlight (long red wavelength of light) gets converted in to the chemical energy with the help of chlorophyll (photosynthetic pigments). Here *Bhag* represents photosynthetic pigment, which leads the *Aryaman* (long red wavelength of light) for the union. The place where the light energy is going to enter is the cell. Here it has been addressed to the light energy that *''watch thou over this house in order to housewife ship; mingle thy self with this husband for thy progeny''*

A.XIV-1-21. Here the light energy (long red wave length of light) is bride and carbon di oxide is bridegroom, addressing to them it has been said that *''ye (two) just here; be not separated; attain your whole life- time sporting with sons and grand sons''* Ath-XIV-1-22. The sons and grand sons are symbolic expressions for the products of the glucose. In the same sequence again it has been said ''*these two move one after the other by magic these two sporting young ones'' Ath. XIV-1-23,24* Here in a symbolic manner anabolic and catabolic reactions of the photosynthesis have been indicated, by saying that by their own power, *these twain in close succession move; they go as playing children round the sacrifice (actions and interactions in a cyclic manner)* Ṛg. 10-LXXXV-18a. It means these two reactions operate in succession one after the other.

21. Let what is dear succeed (sam-rdh) here for thy progeny; watch thou over this house in order to housewife-ship; mingle thy self (tanu) with this husband; then shalt thou in advanced age speak to the council. 21.

22. Be ye (two) just here; be not separated; attain your whole life-time, sporting with sons [and] grandsons, rejoicing, well-homed.

23. These two move on one after the other by magic; two sporting young ones go about the ocean; the one looks abroad upon all beings; thou, the other, disposing the seasons art born new.

It has been indicated that the chemical energy and the carbon (assimilated carbon) move one after the other with oxidation and reduction reactions, in the biological world - ocean of the living-beings, and synthesize new components, through intermediary-metabolism in the cell, it has been indicated.

24. Ever new art thou, being born ; sign of the days, thou goes to the apex of the dawns ; thou disposest to the gods their share as thou comest ; thou extendest, O moon, a long life-time1

''One of the pair beholdeth all existing things; the other ordereth seasons and is born again'' Rg.10- LXXXV-18b.One holds all existing things. It has been indicated that the existence of the living-beings in the nature is due the chemical energy the other one is the product of the photosynthesis (glucose). They under go oxidation and reduction with the biochemical reactions under the seasonal variations, it acquires different forms and shapes again and again. It indicates about the formation of the different substrates from the glucose molecule. Addressing to the glucose

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again it has been said that with its formation it became new and new from morning to evening and disposes shares of Gods (natural components). It means the glucose is the source of the different organic substances, they reaches to their respective places as food, as indicated through moon, which represent night, which extends the length of man's existence Ṛg.10- LXXXV-19, Ath IV-1-24. It means night is the proper time for the transportation of the food material, which extend the longevity of the human-beings.

b. Electron Transfer

During the light reaction chlorophyll molecules absorbs photons (quanta) and become excited. It means the molecules with more energy than the ground state energy. The excess energy absorbed by the chlorophyll molecule is passed on to one of its electron, which is consequently raised to a higher energy level. The high energetic electron is than expelled from the chlorophyll with excess energy, such electron have a very short life. They do not immediately participate in the photochemical reaction they loss their energy partly as heat and partly as radiation as fluorescence or phosphorescence (energy transfer in steps). As a result due to the loss of some of the energy as heat the electron will fall to meta-triplet state. It is these activated triplet state electrons by virtue of their longer life, they can most easily be involved in the photochemical reaction known as photo- phosphorylation and the

electron will return to the ground state. During this journey of the electron it losses its excess energy thrice, first from the excited singlet state to the 2nd excited singlet state. This state can also be obtained by the absorption of blue light but such electrons have very short life. Again it losses its energy as heat to give electrons at the first excited singlet state, this state can also be obtained when chlorophyll absorbs red light. Such electrons are also short lived and under go internal conversion to meta triplet state and get involved in the photochemical reaction, up to this state the excited electrons losses the excess energy thrice, hence it has been termed as thrice purified. The excess energy has been indicated through a metaphor of a garment, which has been infected by the witchcraft, so it has been said that before entering the house as a wife give away garment *(śāmulya).* The importance of the blue and the red light for the photosynthesis has been indicated that it is blue-red when witchcraft's infection is driven away. It means excited electron loss some of its energy as heat and become blue- red, which is 2nd excited and 1st excited state of the electron respectively.

If the husband wraps his body with *Śamulya* then his body becomes unpleasant. It means excited electrons with excess energy are harmful, the sunrays are having different wavelengths of light, they get released their excess energy in parts through phosphorescence, Ath.XIV-1-28. The high intensity of light is like

a harsh barbed poison, *the priest brāhma who know sūryā, he indeed deserves the brides garment, who verily takes the garment and bride remains unharmed* Ath. XIV-1-29&30

It has been indicated here that excess energy- *śāmulya*, when released in the steps, then the released energy is accepted by *the brahma*- ADP and ATP (Adenosine Tri Phosphate) is synthesized through the photo-phosphorylation. It is associated with the pigment system-Ist, and excited electrons move to the pigment system-IInd.

25. Give thou away the śāmulya; share out goods to the priests (brāhmaṇa); it, becoming a walking (padvant) witchcraft enters the husband [as] a wife.

Give thou away the śāmulya; the excess energy of the excited electron has been termed as *śāmulya*, the excess energy is harmful just like witchcraft's infection.

26. It becomes blue-red; [as] witchcraft, infection, it is driven away (?); her relations (jñāti) thrive; her husband is bound in bonds.

It has been indicated that the exited electron loss their excess energy in steps through change in the *blue-red* wave length of light.

27. Unlovely becomes [his] body, glistening in that evil way, when

the husband wraps his own member with the bride's garment.

28. *Carving on, carving open, also cutting over apart; see the forms of Sūryā; them also the priest (brāhmaṇa) cleans (cumbh).*

29. Harsh is that, sharp, barbed, poisoned; that is not to be eaten; what priest (Brāhmaṇa) knows Sūryā, he indeed deserves the bride's [garment].

The harmful nature of the excited electrons for the photosynthetic pigments with excess energy has been indicated that it is just like sharp barbed poison.

30. That priest verily takes this garment, pleasant, well-omened, who goes over the expiation, by whom the wife takes no harm.1

The importance of the chemical energy has been expressed.

It has been prayed to the *Brāhamaṇaspati* (nucleus) that the chemical energy with her husband (glucose). They two may proceed on a successful path and may shine.

Photolysis of the water

By saying that ''now I remove the glistening seizer, body spoiling; that I draw up''. Ath.XIV-1-38.It means that now the excited electrons are ready for the biochemical reaction. For the light reaction the water molecule is having a important role, its

importance has been expressed in this fashion *''He who shines without fuel within the waters, whom the devout praise at the sacrifices (Adhvaryu) O child of the waters, mayest thou give waters rich in honey, with which Indra increased, full heroism.'' Ath. XIV-1-37* In this verse latent energy of the water has been indicated. The *Indra* represents the electricity, the electric energy with its two charges help in the *photolysis* of water ($H^+ + OH^-$), In the nature with this the exited chlorophyll molecule of the pigment system 2nd reached to the ground state by receiving the electron from the water through the photolysis. It has been expressed as the heroic act of the *Indra* (the electricity). In the nature it is related with the short blue wavelength of light, and the non cyclic photo-phosphorylation than the electron moves to the Ist excited state. It is the seat of the long red wavelength of light. The fact has been indicated by saying *''Let the Brāhamin take for her (water) for bathing; let them draw waters that slay not a hero; let her go about the fire of Aryaman (long red wave length of light)''*, here the photolysis of the water has been indicated and then the electrons moves towards the next state, the same is the fire of *Aryaman* and the *Metatriplet* state, from where a biochemical reaction start. The same has been described as *''O thou of hundred activities, having thrice purified Apala'',* (up to this state the excited electrons have released their energy through phosphorescence thrice, hence the electromagnetic energy of

excited electrons has been termed as thrice purified Apala. As suggested by Arnon 1954

''O Indra, thou didst make her sun skinned'', the term 'sun skinned' has been used for the chemical energy and has been expressed in the next verse that *''becoming obedient to thy husband, gird thy self in order to immortality.''* With the formation of the glucose molecule the chemical energy acquire different forms and remains active as immortal. The immortal nature of the chemical energy has been expressed through the anabolic and catabolic reactions in the living-beings. The chemical energy moves in to the food chains and food webs in the nature and remains active as immortal. The glucose is the primary source of the food material, which is the source of complex carbon skeleton of all the living-beings.

Food chains and food webs

The chemical energy generates the complex food webs and food chains in the ecosystem. The same has been indicated through a question that *''They who spun, wove and who stretched the web, what divine one gave the ends about, let them wrap thee in order to old age one long lived put this garment (glucose).''*

With carbon assimilation, the organic matter glucose moves in to the food chains, and food webs. It has been indicated by saying

that put this garment for long life. *''They who spun, wove and who stretched the web, what divine one gave the ends about"* It is an indication that assimilated carbon is responsible for the formation of the food chains and food webs without end.

31. Do ye (two) bring together a successful (samrddha) portion, speaking right in right-speaking; O Brāhmaṇaspati, make the husband shine (ruc) for her; let the wooer (sambhala) speak this speech agreeably (caru).

The glucose metabolism in the cell is regulated by the nucleus. Hence *Brāhmaṅaspati*- nucleus of the cell has been invoked.

32. May ye be just here ; may ye not go away ; may ye, O kine, increase this man with progeny ; going un beauty, ruddy, with soma-splendour – may all the gods turn (kr) your mind hither.

O kine is a symbolic expression for the living-beings, through secondary production, they circulate the food material into the food chains.

33. May ye, O kine, enter this man together with progeny; this man minisheth (mi) not the share of the gods; for this man shall Pūṣan, and all the Maruts, for this man shall Dhātar, Savitā quicken (su) you.

It has been expressed that the natural forces and factors, pūṣan ṣ

sun-rays, maruts- water clouds, *dhātar* - the fundamental energy, *Savitā* - stimulator are working for the assimilated carbon in the nature.

34. Free from thorns, straight, let the roads be by which [our] comrades go a-wooing for us ; together with Bhaga, together with Aryaman – let Dhātar unite [us] with splendour.

It has prayed that the assimilated carbon, which is our comrades for the formation of food chains in the nature for us, together with *Bhag* - photosynthetic pigments, *Aryaman* - long red wave length of light and *Dhātar* - fundamental energy, they may unite us.

35. Both what splendour is placed in dice, and what in strong drink – what splendour, O Aśvins, is in kine, with that splendour favour (av) ye this woman.1

It has been indicated that whatever is going on in the living is due to the assimilated carbon, and chemical energy.

36. With what [splendour] the backsides of the courtesan (*mahā nagni*), O *Aśvins, or with what the strong drink, with what the dice were flooded (abhi-sic), with that splendour favour ye this woman.*

The DNA of the photosynthetic pigment favour the photolysis of water, it has been indicated by *Aśvins.*

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37. He who shines (dī) without fuel within the waters, whom the devout (vipra) praise at the sacrifices (adhvarā) – O child of the waters, mayest thou give waters rich in honey, with which Indra increased, full of heroism.

The importance of water and photolysis of water has been indicated.

38. Now do I remove (apaūh) the glistening seizer (grabha), body-spoiling; what sheen is excellent, that I draw up (ud-ac).

It has been indicated that now the long red wavelength of light is ready for bio chemical reaction.

39. Let the Brāhmaṇs take for her [water] for bathing; let them draw up (?) waters that slay not a hero; let her go about the fire of Aryaman, O pūṣan; father-in-law and brother-in-law are looking on (prati-iks).

Addressing to the *pūṣan*-sun rays, "*let her go about fire of Aryaman*" It has been indicated that the electromagnetic ray- long red wavelength of light is ready for transformation along with photolysis of water. .the father-in-law and brother-in-law is a symbolic expression for the earlier products present in the cell.

40. Weal be to thee gold, and weal be waters; weal be the post (methi), weal the perforation (tardman) of the yoke; weal be for thee the waters having a hundred cleaners (-pavitra); for weal,

too, mingle thy-self with thy husband.

41. In the hole of the chariot, in the hole of the cart, in the hole of the yoke, O thou of a hundred activities, having thrice purified Apala, O Indra, thou didst make her sun-skinned.

The sun skinned is term for chemical-energy; with this the biochemical reaction has been indicated.

42. Hoping for well-willing, offspring, good-fortune, wealth, becoming obedient (anuvrata) to thy husband, girds thyself in order to immortality.

43. As the [mighty (? Vṛsa)] river (sindhu) won (? su) the supremacy of the streams (nadi), so be thou supreme (samrajñi), having gone away to thy husband's home.

44. Be thou supreme among father-in-law, supreme also among brothers-in-law; be thou supreme over sister-in-law, supreme also over mother-in-law.

45. They (f.) who spun, wove, and who stretched [the verb], what divine ones (f.) gave the ends about, let them wrap thee in order to old age; [as] one long-lived put about thee this garment.

It has been indicated that the chemical energy following the organic carbon flows into the food chains, just like the flow of *river Sindhu,* as a supreme energy among the cellular components.

They together spun and wove the food webs in the nature.

c. Dark Reaction

In this way first the transformation of energy has been expressed *''This is that form in which young woman (*A particular wavelength of light*) dressed her self; I desire to know with my mind the wife moving about; I will go after her with nine fold comrades; who, knowing unloosened these fetters'' A. XIV -1-56.*

The reduction of the carbon di oxide through the Calvin cycle has been indicated. The nine comrades are the nine products of the dark reaction. In *Ṛgveda* it has been expressed through *''Ten sons and a husband (glucose) as an eleventh man'' Ṛg. 10-LXXXV-45* (As suggested by Melvin Calvin 1946, 1951.

The first organic molecule glucose has been considered as a husband of the chemical energy. The chemical energy has entered in to the cell through transformation and present in the glucose as free energy. The chemical energy has been termed as the household wife (the chemical energy). This woman has received garment for beauty from the *Tvaṣṭā* (the DNA) by the direction of *the Bṛhaspati* (regulator of the metabolic reactions in the cell) ''*Savitā* and *Bhag* has enveloped this woman, like *Sūryā* with progeny'' it means -*Bhag* (photosynthetic pigment) and *Savitā* has accepted it and the *Savitā* (enzymes) stimulates it so as to produce progeny, it means different products of the glucose molecule, they

are synthesized in the cell, the regulator of the synthesis is nucleus (*Bṛhaspati*) and the various products like the carbohydrates, fats and proteins are the products of the same glucose molecule under the guidance of the DNA (De oxy ribose Nucleic Acid). Hence it has been said that the woman has received garment for the beauty from the *Tvaṣṭā* (DNA),-Ath.-XIV-1-53.

Factors affecting the process

The factors of the photosynthesis have been indicated as *Indra-Soma*- electromagnetic energy, *Mātriśvan* (CO_2), *Mitra* (light) *Varuṇa* (gravity), *Bhag* (photosynthetic pigments). *Aśvins* (morning & evening, it is the indication about the importance of the light intensity, which under go a change from the morning to the evening, *Maruts* (Water clouds), *Brāhamin* (**Soma** -magnetic energy in the cell). These factors control the process Ath. XIV-1-54.

$6C0_2$+ $6H_20$->Light + Chlorophyll = Glucose + 60_2

Further it has been said that ''*Bhag* has fashioned four feet, *Bhag* has fashioned the four frames and *Tvaṣṭā* (DNA) adorned the straps'' Ath. XIV-1-60

It has been indicated that during the synthesis of the glucose it has four steps. The four steps represents the carbon di oxide (CO_2), Water (H_2O), Glucose ($C_6H_{12}O6$) and Oxygen (O_2), they under go oxidation -reduction reactions and stimulates the process of the

synthesis, the four frames- pieces represents four base pairs on the DNA strips. The DNA (*Tvaṣṭā)* is a genetic material with four base pairs, which regulates the protein synthesis and the course of life cycle of the living-beings.

In this way an all formed bridal car (Cell) get established on the journey of the cell towards the evolution. The DNA strips are the two pillars on the natural path-God made road, in the end of the hymn presence of the fundamental energy every where has been expressed under the name of *Brāhamin*. Ath.XIV-1-64

Conclusion

The whole play of life on the earth is due to the carbon assimilation through photosynthesis. It is a unique event in the history of origin of life on the earth. It is the only source of chemical energy and organic carbon on the earth for the living-beings. Once the electromagnetic energy is converted in to chemical energy, it moves into the living-beings through food chains as a immortal along with carbon. The chemical energy has been termed as wife and carbon as father; they together synthesize the assimilated carbon, which is the source of carbon products in the nature. Accordingly the living-beings have evolved on the earth. The products have been termed as their progeny. Accordingly it has been said ***"Vasudhaiva kuṭuṁbakam"*** **The whole earth is one family with all gods** (the natural forces) have

united us of one accord by heart.

The *Apāh* (Water), *Mśātariśvan* (CO_2), *Dhāta* (sun- rays), and *Sarasvatī* (*Vāc*-energy) may unite us. Here it has been indicated that during the process of the photosynthesis Water, carbon di oxide, sun-rays and fundamental energy (*Vāc*-energy) play major role in the photosynthesis.

Soma's wife first; the Gandharva thy next husband; Agni is thy third husband; thy fourth, one of human birth, accordingly Soma gave it to Gandharva and Gandharva gave it to Agni with wealth and son, Agni has given it to me like wise this woman¿.Ath. XV-2-3, 4

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10. Vedic Genetics - cow omniform

Introduction

The living-beings exhibit same functions at cellular level, the cell division start from the chromosomes and ends with synthesis of chromosomes.

Four are his horns, three are the feet that bear him; his heads are two, his hands are seven in number.

Bound with a triple bond the Steer roars loudly: the mighty God hath entered into mortal's Ṛg.4-58-3

The four horns is a symbolic expression of the DNA, where four horns represents-four base of the DNA, two head represents two

strips of the DNA, three legs represents- a triplet code of the DNA, the seven hands represents seven bonds in between triplet nucleotide pair, with its triple bond the DNA roars loudly just like a steer. It has entered in to mortals (living-beings).

Yama beyond, below Vivasvat ṭ beyond that do I see nothing whatever; into Yama has entered my sacrifice; Vivasvat stretched after the worlds (bhū). Atharvaveda 18-2-32

It has been expresed that in the biological world, which is before us, I see nothing beyond Vivasvat-*DNA, from him* Yama *chromosomes have been synthesised. They have been stretched in the world in the form of food chains and the food webs of the living beings in the nature, it has been indicated.*

a. Ṛbhu-Cell and DNA- Tvaṣṭā

In the Vedic terminology the cell has been termed as *Ṛbhu*, literary it means *Ṛ*- to move and bhu - to be, they follow each other and in succession they proceeds towards evolution

The cell has been termed as *Ṛbhu* and the different stages of the cell have been termed as *Ṛbhu, Ṛbhukṣan Vibhvan and Vāja.*

The Nucleus has been termed as *Bṛhaspati,* the DNA has been termed as *Tvaṣṭā* and *Vivasvat,* the cell division has been expressed as re newel of parents.

In the same fashion the chromosome has been termed as *Yama,* which has the information for life and death. The two four eyed brindled dogs of *Yama* is a symbolic expression for the DNA, which constitute the Chromosome, where two dogs represents two strips of the DNA and four eyes is a symbolic expression for the two base pairs of the DNA. The DNA has been termed as *Tvaṣṭā and Vivasvat*. The Duplicating DNA has been expressed through the metaphor of *Sinīvālī*.

The shape of the single loop of the DNA has been indicated through her broad hips, the two dividing DNA strips have been designated as her fair arms and the projecting nucleotides have been expressed as fair fingers.

The single loop of the DNA look like the full moon, it has been expressed through *Rākā.* The duplicating DNA strips exhibits crescent shaped structures, it has been expressed by saying *Kuhu and Gangu*, it means the shape of the dividing strips looks like first day of the moon.

The nucleotide pair has been termed as *aśvins.* The triplet code has been termed as *triṣira.* The hydrogen triple bond has been termed as *Trita or Trika* and double bond as *Duka*, they together as *Trika-Duka.*

The structure and functions of the DNA has been expressed symbolically through the family relationship.

b. Modern concept

All the living creatures exhibit the same functions at the cellular level, under which energy transformation, growth and reproduction are their natural qualities. In all the living-beings RNA-Ribose Nucleic Acid or DNA-De-oxy Ribose Nucleic Acid is the main genetic material, which decides the course of life. The credit for discovering the De-oxy Ribose Nucleic Acid goes to the Watson and Crick. It has brought a revolution in the field of biotechnology. In the biology it is a known fact that in the human beings there are 23 pairs of chromosomes, in which one pair *xx, or xy*, which decides the gender and one pair of chromosome have the information for the life and death. It regulates the life through the Genetic hereditary characters. The chromosomes consist of DNA a characteristic feature of the DNA is the fixed content and sequence of nucleotide pairs along the entire length of its double helix. In this respect any one species of DNA differ from the other species. Accordingly the species diversity is there in the nature with different hereditary characters. A definite number of nucleotides constitute a gene, which have the information about the synthesis of specific kind of the proteins and the enzymes regulate the metabolic reactions.

The DNA is having only four types of bases Adenine, Guanine, Thymine and Cytosine they are arranged on the DNA spiral strips in different sequences. The two base Adenine and Guanine are known as purine and two base Thymine and Cytosine are known as pyrimidine, purine and pyrimidine are complimentary with each other, such as Adenine= Thymine and Guanine ≡ Cytosine and vice versa. These complimentary bases are bind with each other by hydrogen double bond and triple bond. The sequence of three bases, called a triplet known as genetic code, with four kinds of bases in the DNA. There are 64 codes, which are known as genetic code, which is a code for amino acid and constitute a language code for the protein synthesis. The DNA through transcription synthesise mRNA-messenger Ribose Nucleic Acid and mRNA through translation synthesise proteins.

c. The Tvaṣṭā- DNA De oxy Ribose Nucleic Acid

The living cell has been termed as *Ṛbhu*, nucleus as *Bṛhaspati*, chromosomes as *Yama*, genetic material as *Tvaṣṭā* and *Vivasvat*.
The structure of DNA De oxy Ribose Nucleic Acid has been expressed symbolically, through association and interrelationships of the different forms with one another. Their relationship has been expressed through the family relationship as parents, mother,

father, wife, son and daughter, union of two has been indicated through *Aśvins,* it represents a nucleotide pair of DNA. The 64 codes may constitute a language code for recording the thoughts and deeds of an individual, which is imperishable and is stimulated by the words and the thought.

The genetic material DNA is present universally in all the living-beings. It has been expressed as shaper of all the creatures. It has all the information of life.

Tvaṣṭā the lord hath made all forms and all the cattle of the field: Cause them to multiply for us Ṛg.1-188-9

The DNA has been termed as *Tvaṣṭā*, who is shaper of all creatures with multiplication, hence it has been termed as omni form (*Viśvarupa*); it means the DNA is present in all the living beings. For *Tvaṣṭā*, he who knows each sacred song, brought thee to life, pre eminent o'er all the things that be.

It has been expressed that *Tvaṣṭā* – DNA is a supreme genetic material, which is the source of life, and it bears the information of life and death.

Guilt-avenger is Bṛhaspati, who slays the spoiler and upholds the mighty law Ṛg. 2-23-17

The DNA, synthesize the chromosomes and the chromosomes synthesize the nucleus, hence it has been said that *Tvaṣṭā begot*

Bṛhaspati. The *Bṛhaspati represent nucleus,* which has been expressed as regulator and guide.

Run thou past the two four eyed brindled dogs of Saramā, by a happy road; then go unto the beneficent Fathers, who revel in common revelry with Yama. Atharvaveda 18-2-11

What two defending dogs thou hast, O Yama, four eyed, sitting by the road, men watching, with them, O king, do thou surround him; assign to him well being and freedom from disease Atharvaveda 18-2-12

The structure of the DNA has been indicated symbolically through *Yama* (chromosome), the *Yama's* two brindled dogs four eyed watch the path of man, it means they represents two helix of the DNA and the four eyes represents two base pairs, they watch the path of man. It means the life of an individual get regulated by the information, which is there in the coded language of the DNA, it has been said that O king of life *Yama*-chromosome, guide him for well being and freedom from disease. It means all information about the life is in the chromosomes.

Broad nosed, feeding on lives, copper colored, Yama's *two messengers go about after men ((*jana*); let them give us back here today excellent life(*asu*) to see the sun.* Atharvaveda*, 18-2-12*

It has been indicated that *Yama's two messengers go about after*

men. The two messenger are two strips of DNA, which through hereditary characters regulate the physical development of the body, and in its language code it records the deeds of an individual, which go about after a man. It means after the death of an individual, the language code of his deeds is imperishable, which give him back life through opening of the same language code on the duplicating DNA in the womb, where development of the body is according to the hereditary characters and thought energy of previous birth through the language of the DNA decides the course and fate of life.

d. Aśvin- Nucleotide pair

The language of the DNA decides the course of life. The thoughts and actions of an individual are recorded in the coded language of the DNA with birth simultaneously

The DNA consists of nucleotide pairs, which are united with each other through the hydrogen bonds, a nucleotide pair has been expressed as *Aśvin*, which is attached to two strips of DNA. Accordingly the *Aśvin* -nucleotide pair has been expressed as son of two Mother metaphorically.

The aids wherewith the Wanderer, through his offspring's might, or the Two Mothered Son shows swiftest mid the swift,

Wherewith the sapient one acquired his triple lore, - Come hither unto us, O Aśvins*, with those aids.*

The Aśvins represents the nucleotide pair Ṛg. 1-CXII-4

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty Ṛg. 1-CXVIII-1

The nucleotide pairs of DNA are very active in the triplet form, it has been indicated through three seated, they divide very rapidly, hence it has been said that their speed is falcon like and swifter than the mind, their function in the cell are related with oxidation and reduction reaction in side the cell, they speed up the process of DNA duplication, it has been indicated by *Aśvin*-union of two, where each reaction in succession nourishes with synthesis or degradation, hence it has been said that they nourishes the infant Ṛg.1-95-1

5. To fair goals travel two unlike in semblance: each in succession nourishes an infant.

One bears a God like Babe of golden color; bright and fair-shining is he with the other Ṛg. 1-95-1

The function DNA synthesis and duplication in the cell accompanied by reversible oxidation and reduction reaction, which speedup the process of duplication, it has been indicated by *Aśvin-*

union of two, where each reaction in succession nourishes with synthesis or degradation, hence it has been said that they nourishes the infant Ṛg.1-95-1

Tvaṣṭā's ten daughters, vigilant and youthful, produced this Infant borne to sundry quarters.

They bear around him whose long flames are pointed, fulgent among mankind with native splendour Ṛg.1-95-2

The function of the oxidation and reduction has deeply concern with the DNA, it has been indicated through *Tvaṣṭā's* ten daughters, which are two double bond and two triple bond of hydrogen of the four nucleotide pairs of DNA.

e. Role of Trita-Triple bond

May we gain wealth, subduing with thy succour and with the Arya, all our foes, the Dasyu.

Our gain was that to Trita of our party thou gavest up Tvaṣṭā's son Viśvarupa Ṛg.2-11-19

The synthesis of DNA and its duplication is mainly dependent on its triple hydrogen bond, which has been indicated through *Trita*-Triple bond, only with the knowledge of *Trita* and its function, it has been established that *Tvaṣṭā*-DNA acts in the nature through

Trita, due to which its omni-form nature that all the living-beings have DNA De oxy Ribose Nucleic Acid or RNA Ribose Nucleic Acid has been exhibited with biodiversity in the nature.

When Tvaṣṭā deft of hand had turned the thunderbolt, golden with thousand edges, fashioned more skillfully,

Indra received it to perform heroic deeds. Vṛtra he slew, and forced the flood of water forth Ṛg.1 -85-9

The triple and double hydrogen bonds play a major role in the synthesis of mRNA and DNA duplication, which has been expressed by the *Trikadruka* **(=, ≡)** - the two double bond and a triple bond of hydrogen, they regulate the DNA replication. and the electrostatic charge play its role with the help of magnetic energy through the formation and breaking of the bonds, which is thunderbolt of *Indra.* It has been expressed by asking *Indra* to drink *Soma* in an anthropomorphic manner. It is just like a heroic act of the *Indra.*

He slew the *vṛtra* - he removes the obstacle and released the water during the reaction.

Come to us with your chariot triple seated, three wheeled, of triple form that rolled lightly.

Fill full our cows, give mettle to our horses, and make each hero son grow strong, O aśvins Ṛg.1-CXVIII-2

The double helical DNA is the chariot of the aśvins where nucleotides are arrange in triplets, which constitute a triplet genetic code, hence, they are triple seated, it represent triplet code, three wheeled, it means its base sequence is repeated with triplets and it has three forms in the nature.

Tvaṣṭā disposed (vi-dha) the garment for beauty, by direction of Brihaspati, of the poets; therewith let Savitā and Bhaga envelop this woman, like Sūryā, with progeny Atharvaveda, 14-1-53

Tvaṣṭā makes a wedding-car for his daughter; by reason of this, all this creation comes together; the mother of Yama, wife of great Vivasvat, being drawn about, disappeared 18-1-53

Tvaṣṭā makes a wedding-car for his daughter; by reason of this, all this creation comes together; the mother of *Yama*, wife of great *Vivasvat*. The synthesis of the complimentary base pairs of the new DNA has been expressed in this fashion ''having made one of like colour, they gave her to *Vivvasvat''*

They hid away the immortal (bio soul) one from mortals; having made one of like color, they gave her to Vivasvat just like his wife*; what that was carried also the two Aśvins; and Saraṇyu deserted twins (Pair of chromosomes)* Atharvaveda 18-2- *33.*

The Tvaṣṭā- DNA synthesize new DNA from the DNA template, the same has been termed as the bridal car. The single strand of the DNA template has been termed as the daughter of *Tvaṣṭā* and the

new DNA has been termed as *Vivasvat*, The DNA template has been termed as the daughter of the *Tvaṣṭā*-DNA and the same has been termed as wife of the *Vivasvat*- new DNA. Which has been synthesized from the DNA template, his wife- the DNA template due to the synthesis mRNA lost her identity, hence it has been said that his wife *Saraṇyu* daughter of *Tvaṣṭā* has disappear. It means the daughter represents the DNA template and after the synthesis of the mRNA, the DNA lost its identity, which has been expressed metaphorically. The *Saraṇyu* carried also the two *Aśvins,* it means the DNA template synthesise new DNA with complimentary base pairs. Accordingly the DNA synthesise the pairs of the chromosomes, it has been expressed by that *Saraṇyu* deserted two twins.

He is the father of *Aśvins* (nucleotide pair), it means *Aśvins* nucleotide pairs have been synthesised from the parent DNA. He is the father of *Yama*- *Yamī* (Twinned pair of chromosome) It means chromosomes have been synthesised from the DNA, it has been indicated by saying that *Saraṇyu* deserted two twins. In this way the formation of the chromosome pair has been indicated symbolically.

He is the father of *Manu*-human race. It indicates that DNA is responsible for the evolution of the human species

With Trikadrukas it purifies it self six wide ones verily great one; tristubh, gāyatrī, the meters: all those (are) set in Yama Ath. 18-2-6.

The activity of the DNA has been expressed through *Trikadruka (=,≡),* it represents a triple bond and a double bond of hydrogen, through which the complimentary base pairs are joined with each other. 'The six wide ones' represents the three base pairs. 'The verily great one' it indicates a triplet language code on the DNA template. The language of the DNA has been expressed through the *tristup, Gāyatrī* and the meters: all those (are) set in *Yama*. It means the information is in the chromosome.

The triple and double hydrogen bonds play a major role in the synthesis of mRNA and DNA duplication, it has been expressed by the *Trikadruka (=,≡)* and the electrostatic charge play its role with the help of magnetic energy through the formation and breaking of the bonds, it has been indicated by asking *Indra* to drink Soma in an anthropomorphic manner. It has been described as heroic act of the *Indra*

He slew the *vṛtra* and released the water during the reaction 4

The reactions are reversible and operate in succession with oxidation and reduction.5

The well organized system of DNA duplication is due to the triple

bond, it has been termed as *Trita*.6

A single loop of DNA has four base pairs, having two, double bond and two, triple bond, the total is ten. It has been indicated by *Tvaṣṭā* 's ten daughters.[1]

Originally the DNA has only four types of base, the three bases constitute a genetic code means a code for an amino acid for the synthesis of protein, there are 64 codes. In the Vedas the triplet genetic code has been termed as three headed demon or *Triṣira* the son of *Viśvarupa* (omni-form) *Tvaṣṭā;* till the triplet code is in association with the DNA, it is unproductive. In the nature one of the strand of the DNA act as a template for the synthesis of mRNA in the presence of the enzyme DNA polymerase. Which have the coded genetic information for the protein synthesis, the base sequence in mRNA is complimentary to the base sequence in parent DNA. The synthesis of mRNA for the protein synthesis is its productive power, which initiates the protein synthesis, the same has been expressed through *Trita-* triple bond, which is the slaughter of the three headed, six eyed demon (three complimentary base pairs) Ṛg.10 -99-6

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1. Tvaṣṭā's ten daughters, vigilant and youthful, produced this Infant borne to sundry quarters.
   They bear around him whose long flames are pointed, fulgent among mankind with native splendour Ṛg. 1-95-2

Lord of the dwelling, he subdued the demon who roared aloud, six eyed and triple headed.Trita made stronger by the might he lent him, struck down the boar with shaft whose poison was iron Ṛg.10-99-6

Well skilled to use the weapons of his father Āptya urged on by Indra fought the battle then Trita slew the foe seven rayed three headed and freed the cattle's of the son of Tvaṣṭā Ṛg.10-8-8

The release of the cattle's indicates the productivity of the mRNA, which takes part in protein synthesis through the genetic code. The triplet code generates due to the separation of triplet base through breaking the two-double and a single triple bond.

The weapon of the *Trita* is bond energy it has been indicated by *Indra*-electrostatic energy and *Āptya* water. The triplet code generates due to the separation of triplet base code through the breaking of the two double and a single triple hydrogen bond with hydrolysis. *Fought the battle then Trita slew the foe seven rayed three headed.* The breaking of the bonds and the removal of the triplet code has been indicated through the seven rays and three head. Accordingly *Tvaṣṭā's Viśvarupa* -the omni-form nature has been expressed due to the duplication of the DNA in a systematic

manner. The DNA is universally present in the living organisms. It acts in the nature through the chromosome-*Yama* and new DNA from the DNA template *Vivasvat*. In this fashion the DNA spread in all the directions in the form of living-beings. It has been expressed as the cattle's of the son of omni-form *Tvaṣṭā* symbolically. The *Trita* freed the cattle's of *Tvaṣṭā*- It indicates the replication of the DNA with breaking of the triple bond with hydrolysis.

Lord of the brave Indra cleft him in pieces, which sought to gain much strength and deemed him mighty. He smote his three heads from his body seizing the cattle of the omni form Tvaṣṭā Rg. 10-8-9.

The battle of *Indra* is a symbolic expression for the activity of the bond energy. The synthesis and duplication of the DNA molecule depends on the breaking of the hydrogen double bond and triple hydrogen bond energy. The triple bond of the hydrogen is strong and mighty. It binds the nucleotide pairs in the DNA with strong hold. The removal of the triplet code has been indicated metaphorically that *lord of brave Indra cleft him in pieces. He smote his three head* is a symbolic expression for the triplet code. The *seizing the cattle of the omni-form Tvaṣṭā* is a symbolic expression for the locking up of the DNA replication by the triple

hydrogen bond.

Yama beyond, below Vivasvat ṭ beyond that do I see nothing whatever; into Yama has entered my sacrifice; Vivasvat stretched after the worlds (bhu) Atharvaveda 18-2-32

It has been expressed that in the biological world, which is before us, I see nothing beyond *Vivasvat* - DNA. From the *Yama* chromosomes have been synthesized. They have stretched in the world in the form of food chains and the food webs. It has been expressed that in the Biological world, the DNA is universally present.

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11. Indus - Vedic Genetics

Introduction

The Indus Valley cities were scientifically developed and the Vedas are oldest literary monuments of human civilization on the earth.

The Indian village culture has created a confusion regarding inhabitants of the Indus Valley. The Vedic language and the Indus Valley inscription were beyond interpretation.

The modern Genetics has opened the key for the interpretation of Vedic metaphors and Indus Valley pictographs. It explores the advance knowledge of the creation and life on the earth. **Higgs; God particle has further opened the key to decode Vedas.**

A invisible field lying across the universe gives particles their mass, allowing them to clump together to form stars and planets.

The same has been expressed in *Puruṣa Sukta*, which explain the origin of the universe from eternal energy.

Higgs; God particle

An invisible **field** lying across the universe give particles their mass, allowing them to clump together to form stars and planets.

Foundation of Vedas

From him Virāj was born; again Puruṣa from Virāj was born.

As soon as he was born he spread and than earth and planets Ṛg.10-90.5

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future age Ṛg.10-72 1

With the scientific interpretation of the Vedic metaphors, the decipherment of the Indus Valley seals is possible. For which India and Indian culture were awaiting since long.

It will also reveal the fact that once in the history Vedic culture flourished on the earth, without it such scientific work is not possible, it is also not possible that through meditation in the state of trance, such knowledge can be explored?

The Indus Valley Seals

he seals have engraved pictographs of animals and human figur ith inscriptions above the animal.

is a fact that the Indus Valley civilization was scientificall eveloped. It has generated a quest that how they have touched thi eight of development? Accordingly the search has been done in ifferent direction, which was not touched earlier by the scholar orking on Indus Valley. For them the script of Indus Valley seal nd Vedas were only the guide. The unsolved problem of Vedi nguage, Indus script and philology has intensified the mystery.

he scientific approach in the light of modern science has given th nswer that the Vedic language and Indus Valley seals have synonyn mbols, and they can be interpreted in the light of modern science.

is the testimony in self that the Indus Valley civilization wa ientifically developed. The Indus Valley cities Harappa an Iohenjo-daro show the physical development only, reflecting only nall picture of their mental development. The other aspects of a wel eveloped civilization can be seen in the Vedic texts, where a pictur f a well developed society has been given Ṛg. 1-164, *Asya-vāmīy ūkta* - The hymn of the supreme, it reflect their mental level, witl ıch type of intellectual development, the cities like Harappa an Iohenjo-daro can be developed.

The scientific study and analysis of engraved symbols on the seals reveals that the seals, tablets and mini button seals are the materials for demonstration and teaching at higher academic institutes with their literary evidences in the Vedas.

The skill with which the seals have been prepared reveal its importance and use of scientific tools to engrave the symbols on the seal shows that each and every symbol on the seal has its importance.

The typical inscriptions are mostly no more than four or five characters in length, on some seals only on or two symbol or only figure of animal motif in different shape. Mostly the inscriptions start from U shaped symbol and end with U shape symbol. It shows that the cell division begins with the synthesis of chromosome in the cell and it ends with the synthesis of chromosome with cell division.

The theme of the inscription is symbolism, where the symbol has vast ocean of knowledge in the background. Where single symbol or figure of animal motif describe the whole story of the symbol, for one must know the reference and context of the symbol with its purpose. Accordingly all the symbols can be deciphered in

chronological order with story of concern symbol.

Mostly only one symbol is important, keeping in mind the importance of particular symbol, the seals have been prepared. The related teacher or the student can grasp its meaning, and can explain the symbols and text behind the symbol in chronological order.

The common purpose and aim of the seals, tablets and miniature button seals is demonstration, teaching and examination of the students of a particular Institute, where the teacher uses different metaphors to express the knowledge, and examine the students and their ability to grasp the symbol in right perspective.

Accordingly the seals can be classified into seals in groups for demonstration and teaching, and the individual seals are for the examination. Where each seal or symbol is complete in it self with difference in symbol and animal figure.

The subject matter moves round the cosmic principles and life on the earth. It is interesting to know that the knowledge revealed on the seals is sovereign Science of the creation, under which the creation is working as a system. It is the product of long research

in various fields as revealed by the figures on the seals in a sequence. The contemporary discoveries were in successive steps with repeated experiments. The established theories and principles have been engraved on the seals symbolically.

The electron microscopic models of DNA and the DNA micro bodies on the seals have encouraged into the depth of the symbols. The recent discovery of the Higgs; God particle and the discovery of single unified force by the successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böhm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter - non - local causes operate and similar particles at a space like distance or some how - instantaneously interconnected without the connection of any signal like light or electromagnetic waves. It has given the sufficient ground to decipher the seals.

In the past few hundred years the development of modern science has tried to explore the mystery of life on the earth in a systematic manner through experiments and their conclusive results.

It seems that evolution of the civilization and its destruction with time is a natural process on the earth. The excessive exploitation of

the nature is the cause of destruction.

Now we know that the creation is a system, the great scientist Einstein has enlightened the world that the creation is working, under the laws of thermo dynamics.

In Einstein's equation $E = mc^2$ it means energy and mass can be converted in to each other, where E =Energy, m=Mass and c =Velocity of light.

Life has originated on the earth through a chemical synthetic process of evolution. The Ozone layer protects the life on the earth.
The light energy is converted in to chemical energy through photosynthesis by the green plants, which is the source of carbon skeleton of the living-beings.

The DNA with four bases is main genetic material, which is universally present in the living-beings. The system is working under the bio-geo-chemical cycles in nature through oxidation and reduction reactions. The time on the earth is related with the rotation of the sun at its axis. All these conclusions of modern science have been discussed in the Vedas also, and the same have

been engraved on the seals symbolically.

A teacher and a subject expert professor can understand the importance of metaphors and riddles in day to day life to explain the knowledge in a simple way, so that the listener can grasp the knowledge in it. In the same fashion the Vedic texts and Indus Valley symbols move forward with their contemporary knowledge in the background. Accordingly any subject expert can grasp the meaning of the symbols.

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12. Single unified force

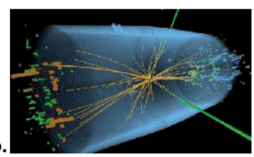
The Creation came into existence from an eternal fundamental energy with energy transformation under the laws of thermodynamics; all the components of the creation are linked with him, just like branches of a tree round about the trunk.

A great monster (yakṣa) in the midst of the creation (bhuvana) strode? (krānta) in penace on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk Atharvaveda 10-7-38

It has been indicated through the metaphor of the tree that all the components of the nature have evolved from the fundamental energy, and all are linked with him like the branches of a tree. He is in the middle of the creation. It indicates symbolically that all the components of the creation and nature are interconnected with fundamental energy in the centre. The discovery of single unified force by **t**he successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böhm, and Alain Aspect in 1985

It has been indicated on the seal figure - 1 (fig. 6.3 tablet Harappa. H95-2523)


Figure 1The single unified force

a.  b. 

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Figure 2 Higgs; God particle

Higgs; God particle on the seals, the space in the center has been depicted on the sun burst symbol and on the mouth as toungue.

Gods' tongue is truly Amrita's centre

The space enclosed in the nucleus of the atom it impart the gravity to the atom and bind atom in series, it is building block of the creation. The space enclosed within the nucleus has been termed as tongue of elementary particles. It has imparted gravity to millions of other particles in series. The same has been termed as Higgs ṣ the modern God particle.

A invisible field lying across the universe gives particles their mass, allowing them to clump together to form stars and planets.

The same has been expressed in *Puruṣa Sukta*, which explain the origin of the universe from eternal energy.

Higgs; God particle

An invisible **field** lying across the universe give particles their mass, allowing them to clump together to form stars and planets.

Foundation of Vedas

From him Virāj was born; again Puruṣa from Virāj was born.

As soon as he was born he spread and than earth and planets Ṛg.10-90.5

It explains the origin of the creation from eternal energy and cosmos.



Figure 3 Four feet, frame and *Tvaṣṭā*

a.   Four feet, frame and *Tvaṣṭā*

The symbols expresses four frame (symbol- square) that the four base of the DNA have synthesized the chromosome (symbol V), and ***Tvaṣṭā*** **DNA has adorned shapes to living-beings**.

b.   The life has evolved from single cell and DNA

c.   The DNA has synthsized the chromosome. It has spread in all direction with biodiversity.

It has produced the cell with nucleus (the symbol dot in the cell).

It has been expressed that the life has evolved from single DNA and cell division.

Bhaga fashioned the four feet; Bhaga fashioned the four frame pieces (? Usyala; Tvaṣṭā adorned (pic) the straps (? vardhna) along in the middle; let her be to us of excellent omen Atharvaveda 14-1-60

Symbolically the four feet and four frames express the four components of atom, and the four frames express the four bases of the DNA. They constitute the base of the living and non-living

objects. The *Tvaṣṭā* is the shaper of the forms with triple bond in the centre of the two strips of the DNA Atharvaveda 14-1-53

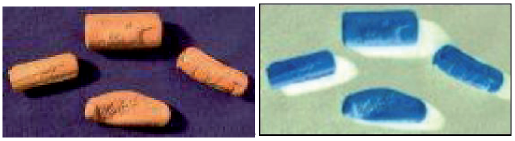


Figure 4 Four tablets

The tablets have been prepared for the examination, where the student has to pick up the symbol for answer.

a. the animal on the seal represent eternal cosmic energy. The creation has evolved from eternal cosmic energy.

b. the crockodile with two pair of legs represent two nucleotide base pairs of DNA on the seal. The life has evolved from DNA

c. The ribosome translates the DNA code into life. The two loops represent ribosome, the chromosome undergo crossing over, and evolution.

d. The U shaped genomic chromosome and block.

The communities and territories have evolved with genetic recombination.

Figure 5 The synthesis of the chromosome from the chromosome

It has been expressed that the cell division begins from the chromosome and ends with synthesis of chromosome.



The synthesis of the chromosome from the chromosome in the cell has been expressed.

Figure 6. Crossing over between the two different genomic chromosomes



The crossing over between the two different genomic chromosomes and the synthesis of the new chromosome with DNA replication and cell division has been expressed.

Figure 7 the two birds under same shaltering tree



Two birds with fair wings, knit with bonds of friendship, in the same sheltering tree have found refuge,

One of the twins eats the sweet Fig-tree's fruitage; the other eating not regardeth only.

It has been expressed on the seal that life has evolved from a single cell and DNA . The genomic chromosome is the carrier of hereditary characters with cell division, the ribosomr translate the DNA code in to life.

The tree represent cosmic tree, the components of the creation are

linked with him, just like branches of a tree round about the trunk. The living-beings enjoy the fruit of life under this tree, the life the immortal life principle in the body is spectator, and immortal DNA enjoy the fruit of life.

The two bulls under the same shaltering tree symbolically express the eternal life life enrgy as spectator and another is DNA bio soul, who enjoy the fruit of life. The same has been expressed on another seal, by a human figure and a animal looking towards the man as spectator.

It has been expressed that the life principle in the body is immortal, and bio-soul, immortal DNA is instrument of life, it is the carrier of hereditary characters and thought actions from generation to generation.

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13. Cycle of thought Energy and role of DNA 209

Introduction

The role of thought energy in the life has not been established so far in the scientific world, similarly the structure and function of the DNA is restricted to the protein synthesis and gene manipulation. Now the scientists have realized 'holistic paradigm.' in the same way importance of the ***Vāc-*** energy may be established in the future.

The Vedic knowledge reflects that they were fully acquainted with the structure and function of the DNA as we know today. Hence, looking to the similarity of the knowledge up to the DNA, cosmic principles and theories of modern science, it is worth to examine the role of thought energy and DNA in the cycle of thought energy, as indicated in the Ṛg. 10-184-1, 2, 3

1. May Viṣṇu form and mould the womb, may Tvaṣṭā duly shape the forms.
Prajāpati infuse the stream and dhata lay the germ for thee.
2. O Sinīvālī set the germ, set thou the germ Sarasvatī. May the twain gods bestow the germ. The Aśvins crowned with lotuses.

In the Ṛ*gveda,* it has been expressed that the *Tvaṣṭā-DNA* give shapes to the infant in the womb and the germ is get set by the *Sinīvālī* (duplicating DNA)and *Sarasvatī* (***Vāc-*** energy) in the womb. Accordingly *Aśvins* (nucleotide pairs) crowned with lotuses, it means the development of the children is there according to the hereditary characters in the DNA. Where the *Sinīvālī* is the code initiator and the *Sarasvatī* (thought energy) opens the door of a language on the DNA, accordingly from the *Aśvins*-nucleotide pairs of DNA, physical cellular body develop just like the lotus flowers.

The discovery of DNA by the Watson and Crick and Vedic knowledge confirm the universality of DNA in the living-beings. On the same line scientists may be able to search the language code of rebirth in future as indicated in the Vedic hymns.

Bṛhadāraṇyaka Upniṣad

On the earth, human species is highly evolved under going evolution of mental qualities under the cycle of rebirth and death. Through the experience of past deeds and present thought, evolution of the mental qualities from animal instincts to human instincts- *Tamo guṇa to Rajo guṇa and Sato guṇa* under the cycle of rebirth is the aim of life as described in Bṛhadāraṇyaka Upniṣad.

Thought Energy

The creation is a system, which is self sufficient and self regulated

under the fundamental energy. The system is operating under the bio-geo-chemical cycles, synthesis and degradation is the law of nature, where nothing is stable, every thing is moving forward towards its disintegration with time. In the same fashion the living-beings exhibit their life cycle. The cellular body undergo ageing and disintegration with time. The time is main factor, which has the beginning, with rotation of the sun at its axis. The one complete rotation of the sun at its axis is known as ***Sā**ṁvatsar kāla. The kāla-* time is supposed to start with entry of the sun in *'Aries'*. Just like under the cosmic principle sun shows rotation in the same fashion living-beings complete their life cycles as per the hereditary characters received from the parents through De oxy ribose Nucleic Acid DNA, and bio-geo-chemical cycles operate in the nature. In the same sequence fundamental energy and thought energy - *Vāc* exhibits their impact in cyclic manner. The fundamental energy is symbol of consciousness and the thought energy is the symbol of fate of an individual in the life, due to this even the time twins have different mentality and fate.

It is a scientific fact that every thing is perishable under space time and environmental conditions, but the fundamental energy is eternal and imperishable. In the same fashion, *Vāc*- thought energy is synonym to fundamental energy and imperishable. They persist in the atmosphere even after the death of an individual, and particular to an individual person. They exhibit their impact with

the function of DNA in the living-beings. The thought energy has described as 'footless'.

She that is footless goes first of them that have feet: who understood that of you, O Mitra and Varuṇa? The embryo brings the burden of her; she (?) fills (? Pr) truth protects (ni-pa) untruth.

It suggests that the thought energy of a dead person persists in the universe, who move from the heaven in to the living beings, who have feet-life, and during the duplication of the DNA in the embryo, it initiates the burden of her deeds - it means the language code, which open on the DNA, it decides the fate of the individual as per his 'footless' thought energy, which have its appearance with the birth. It has been indicated by *the embryo brings the burden of her.* Atharvaveda-IX-10-23

De oxy ribose Nucleic Acid - DNA

The whole play of life on the earth is due the two complimentary DNA base pairs (Adenine, Guanine, Thymine and Cytosine.) A=T, G ≡ C, the universal nature of the DNA has been expressed by the omni-form nature of *Tvaṣṭā*.

Tvaṣṭā the lord hath made all forms and all the cattle of the field: Cause them to multiply for us Ṛg.1-188-9

The DNA has been termed as *Tvaṣṭā*, who is shaper of all creatures with multiplication, hence it has been termed as omni- form (*Viśvarupa*), it means the DNA is present in all the living- beings.

For *Tvaṣṭā*, he who knows each sacred song, brought thee to life, pre eminent o'er all the things that be.

It has been expressed that *Tvaṣṭā* – DNA is a supreme genetic material, which is the source of life, and it bears the information of life and death. it regulate the life cycle of the individual through hereditary characters received from the parents.

The chromosomes and the DNA maintain their continuity in the living-beings through their off-springs. The DNA records the deeds and thoughts in its genetic language code sequence, the language remain active through out the life and the language is imperishable. The symbols, which we see from the eyes and the words, which we hear through the ears are acts as thought stimulates, just like enzymes stimulate the metabolic reactions in the cell body. The impact of the symbol and the words is on the whole body, but we perceive and grasp them through the centres of sense organs only depending on the capacity of eye-sight and frequency of sound. Although they have impact on the body at micro level through phonoatomic effect. It is just to justify the impact of thought energy prevailing in the atmosphere, which influence the living organism without notice according to the mentality of the person concern in a particular situation, and unknowingly, and he acts accordingly. It is

possible only, when these two *Vāc*- energy have same frequency. The *Vāc*- thought energy prevailing in the atmosphere is at very low frequency. It is very hard to catch them, because they are intermixed with different frequencies at micro level. Although the scientist, are trying to catch the *Vāc*-energy of our ancients. It is during the sleeping condition, when mind is at rest, the brain waves are also at low frequency level can catch these low frequency waves of *Vāc*-energy prevailing in the atmosphere, they stimulate the language of the DNA, and a person observe the dreams. The intermixed *Vāc*-energy of atmosphere stimulate the language in various directions, hence there is no sequence of the imaginary scenes and actions in the dreams of an individual. For it no scientific explanation is there so far in the modern science. The same thought energy initiate the stimulation of complimentary language code on the duplicating DNA in the womb. Accordingly, the language open on the DNA, which decide the fate of the individual with new birth with past deeds in the background, the hereditary characters of DNA regulate the physical development.

The coded language of the DNA may be stimulated during the DNA duplication in the womb, of a new infant through the thought energy of an individual of a dead person, because the thought energy of a person is imperishable, which persists in the atmosphere even after the death of an individual. It stimulates the opening of the language. The same has been indicated through

Yama's two four eyed dogs, who watch the path of the man. It means duplicating DNA is waiting for the rebirth of a thought mentality of an individual.

The *Yama* is a king of life and death. It represents chromosome, as we know that in the human beings there are twenty three pairs of chromosomes and out of it one pair, who bears the genetic information about the life and death. It has been termed as *Yama* and the different chromosomes have been termed as *Yama* and *Yamī*, it indicates about the crossing over between two different strains of chromosomes. *Yama's* two brindled dogs with four eyes, who watch the course of life of a man, in the modern terminology they represents two strips of the DNA and four eyes symbolically indicates about two complimentary DNA base pairs (Adenine, Guanine, Thymine and Cytosine.) A=T, G □ C, they records the deeds and thoughts in its genetic language code sequence, the language remain active through out the life and the language is imperishable. The chromosomes and the DNA maintain their continuity in the living-beings through their off-springs. The coded language of the DNA may get stimulated during the DNA duplication in the womb of a new infant through the thought energy of an individual of a dead person, because the thought energy of a person is imperishable, which persists in the atmosphere even after the death of an individual. The same has been indicated through *Yama's* two four eyed dogs, who watch the path of the man. It

means duplicating DNA is waiting, for the rebirth of a thought mentality of an individual.

O broad ṣstressed Sinīvālī thou who art the Sister of the Gods,
Accept the offered sacrifice, and, Goddess, grant us progeny Ṛg 2-32.6.
With lovely fingers, lovely arms, prolific Mother of many sons-
Present the sacred gifts to her, to Sinīvālī Queen of men. Ṛg 2-32-7.

The structure of the duplicating DNA has been expressed symbolically through *Sinīvālī*, who is broad hipped, fair armed, fair fingered. The broad hips represent a loop of the DNA and the two separating strips have been termed as fair arms and the projecting nucleotides are termed as her fingers. She is mother of many sons, it means she is related with the progeny and has been invoked with *Sarasvatī.*

Her Sinīvālī, her Gungu, her Rākā, her, Sarasvatī, Indrani to mine aid I call, and Varunani for my weal. Ṛg.2-32- 8

The Sinīvālī has been invoked with *Rākā, Kuhu- Gungu and Sarasvatī*, where *Rākā* represents full moon. It means a loop of the

DNA is like a full moon. *Kuhu* and *Gungu* represents first day of moon, it means the separating DNA exhibits crescent shaped structures, they looks like first day of the moon. *Rākā* has been invoked for a good son, it indicate that during the separation of DNA strips in the womb, the code which open is for the thought energy of a particular ancestor, accordingly, she has been invoked with *Sarasvatī*-thought energy.

With eulogy I call on Rākā, swift to hear: may she auspicious, hear us, and herself observe.
With never breaking needle may she sew her work, and give a hero son most wealthy, meet for praise Ṛg.2-32-4

The *Rākā*-duplicating DNA has been invoked for a hero son.
All thy kind thoughts, O Rākā, lovely in their form, wherewith thou grantest wealth to him who offers gifts,
With this come thou to us this day benevolent, O Blessed One, bestowing food of thousand sorts Ṛg.2-32-5

It has been expressed that duplicating DNA is the source of food of thousand sorts in the nature.

Stand firm; viraj art thou; as it were, Viṣṇu here O Sarasvatī; O Sinīvālī, let her have progeny; may she be in the favour of Bhaga,

Ath. 14-2-15

So it has been prayed for a pregnant girl, O *Sinīvālī*, O *Sarasvatī* grant her good progeny.

Where *Sinīvālī,* represents the duplicating DNA and *Sarasvatī* is thought energy moving in the universe. The duplicating DNA and the thought energy play important role in opening the code on the DNA in the womb. Hence they have been prayed to grant her good progeny, accordingly a dead person's thought mentality may get rebirth.

1. May Viṣṇu form and mould the womb, may Tvaṣṭā duly shape the forms.
Prajāpati infuse the stream and dhatar lay the germ for thee.
2. O Sinīvālī set the germ, set thou the germ Sarasvatī. May the twain gods bestow the germ. The Aświns crowned with lotuses.

3. That which Aśvins the Twain rub forth with the attrition stock of gold that germ of thine we invoke that in the tenth month thou may bear.Ṛg.10-184-1, 2, 3

In the Ṛ*gveda,* it has been indicated that the *Tvaṣṭā* give shapes to

the infant in the womb and the germ is get set by the *Sinīvālī* and *Sarasvatī* in the womb. Accordingly *Aśvins* (nucleotide pairs) crowned with lotuses, it means the development of the children will be there according to the hereditary characters in the DNA. Where the *Sinīvālī* is the code initiator and the *Sarasvatī* (thought energy) opens the door of a language of the past birth, which is particular to an individual through the difference in the base sequence and the language code. It means the first code, which is present on the single strand of the DNA template. It acts as the language code initiator for a particular mentality, which is particular to an individual. Due to this even the time twins have different characters, mentality, and fate. The *Aśvins* crowned with lotuses, it indicates the function of the nucleotide pair with triple bond, which proliferate with development of the physical body just like lotus flowers, it has been expressed by germ of gold metaphorically, which has been invoked in the tenth month after the birth.

The rebirth may be in other forms also, it has been indicated in the funeral hymns of Atharvaveda and Ṛgveda.

The Sun receives thine eye, the Wind thy spirit; go, as thy merit is, to earth or heaven,

Go, if it be thy lot, unto the waters; go make thine home in plants with all thy members' Ṛg. 10-16-3

It has been said that after the death of an individual, his eyes goes to the sun, wind his spirit goes in heaven or earth as per his merit, it is possible according to the deeds, he may go in to the waters or in the plants.

Thy portion is the goat: with heat consume him: let thy fierce flame, thy glowing splendour, burn him.
With thine auspicious forms, O Jātavedas bear this man to the region of the pious Ṛg.10-16-4

The goat is a metaphor for the cell body, which under go aging and with decomposition it take part in the creation sacrifice, after the death, it is consumed in the nature with fire. It has been prayed *that Jataveda Agni* may bestow him region of the pious.

Again, O Agni, to the Fathers sends him who, offered in thee, goes with our oblations.
Wearing new life let him increase his off-spring: let him rejoin a body Jatavedas Ṛg.10-16-5

It has been prayed to *Agni* send the departed soul to the fathers and let him rejoin a body to increase his off-springs with new life.

70.Give back, O forest tree, him who is deposited here with thee, that in Yama's seat he may sit speaking counsels.
Atharvaveda 18-3-70

A thought energy of a person may find its place as bio-soul in the plants, hence it has been prayed that O tree, give him back, who is deposited in *Yama's* seat-chromosome, let him rejoin a body so that he may be in speaking councils.

Ye brought the horse's head, Aśvins, and gave it unto Dadhyac the offspring of Atharvan.
True, he revealed to you, O wonder workers, sweet Soma, Tvaṣṭā's secret as your girdle- Ṛg 1-CXII-22.

The secret of biotechnology is in the *Tvaṣṭā*- DNA, through which transplantation can be there, it has been indicated.

Conclusion

The rebirth is a phenomenon, which is hard to digest, because through it one has to face the consequences of his deeds, which are known to the self only. It is a fact that after the end of life cycle the physical cell body decomposed and mixed into the soil. We can not imagine the rebirth of the physical cell body. In this sense rebirth is a confusing term. In actual sense with death of the body, the life energy disappears and thought energy released in to the

atmosphere, which is imperishable and persists in the atmosphere at low frequency. The DNA, which is responsible for the physical development of the cell-body, is immortal in the sense, that it has maintained its continuity through off-springs. It is the mentality, which is particular to an individual. The thought energy reflects the mentality of the person concern, and when the thought energy finds its complimentary thought mentality, and language code on the duplicating DNA in the womb, accordingly the thought mentality regenerate with new birth. Where the physical development of the body will be according to the hereditary characters, and the mental level and fate will be according to the language of the past mentality. Due to this even the time-twins are having different mentality and fate in the life. The birth is a moment of judgement of his deeds.

The embryo brings the burden of her; she (?) fills (? Pr) truth protects (ni-pa) untruth.

Accordingly the human -beings get rewards in life as per their past deeds, the language of the thought energy fills the truth and protects untruth.

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14. The eternal fundamental energy *Puruṣa*

The origin and evolution of the creation from the fundamental energy- *Puruṣa* has been traced in *Puruṣa sūkta*, where the fundamental energy has been imagined symbolically in the form of a man. The laws of thermodynamics have been described in the 1st four stanza of *Puruṣa sūkta*. The cosmic principles have been expressed in the last stanza 15 and 16.

The horned hood and three faced *Puruṣa* symbolically narratethe story of origin and evolution of the creation of *Puruṣa sūkta*, the

same has been depicted on the seal, through the *Yogic* posture of a man with three face and a twig of pipal

A thousand heads hath Puruṣa, a thousand eyes, A thousand feet on every side pervading earth he fills a space ten finger wide Ṛg. 10-90-1

This Puruṣa is all that yet hath been and that is to be; The lord of immortality, which waxes greater still by food Ṛg. 10-90-2

All creatures are one-fourth of him, three-fourths eternal life in heaven Ṛg.10-90-3

With three-fourths Puruṣa-went up: one fourth of him again was here. Thence he strode out to every side over what eats not and what eats Ṛg.10-90-4

Here, it has been said that the three-fourth part of the fundamental energy is invisible in the heaven, only its one-fourth part is under going transformation again and again. It spreads on every side as animate and inanimate creation.

He formed the creatures of the air, and animals both wild and tame Ṛg.10-90-8

From it were horses born, from it all cattle with two rows of teeth 10



Figure 1 The eternal fundamental energy *Puruṣa*

The creation has evolved from the imaginary *Puruṣa* fundamental energy with energy transformation. The laws of thermodynamics have been expressed by the three faces of the symbolic Man. It has been expressed that whatever is present in the creation is fundamental energy.

1 1  **The three face ṣ the laws of thermodynamics**

It has been expressed that the three-fourth part of the fundamental energy is above the visible world Rig-Veda 10-90-3

1 2 The Horns

The four horned buffalo emitted Rig-Veda 4-58-2

It has been expressed that the building block of the creation is three charged particles and fourth is generation of the energy in the Atom.

1 3  **The Genomic chromosome**

It has been expressed that the genomic chromosome has been synthesized from the four bases of the DNA.

1 4  **The cell & cell division**

It has been expressed that the cell body has been synthesized by the genomic chromosome with cell division.

1 5  **The evolution**

It has been expressed that the DNA replication and chromosome is the cause of evolution.

1 6  **1 7**  **1 8**  **evolution of human species**

It has been expressed that the human species came into the

existence with genetic recombination

1 9  **1 10**  **the ornaments**

It has been expressed that the creation came into the existence from the three charged particles with generation of the energy in the Atom. All the components of the creation are linked with him just like ornaments on the body.

Figure 2 Origin of life

Cat. No. 23 text figure VIII

Square seal, depicting a nude male deity with three faces, seated in yogic position on a throne, wearing bangles on both the arms, and an elaborate headdress. Five signs of the Indus script appear on either side of the headdress. Which is made of two outward projecting buffalo style curved horns, with two upward projecting points. A single branch with three pipal leaves rises from the middle of the headdress. The figure wears seven bangles on the left arm and six on the right, with the hands resting on the knees. The heels are pressed together under the groin, and the feet project beyond the edge of the throne. The feet of the throne are carved with the hoof of a bovine as on the bull and unicorn seals. The seal may not have been fired, but the stone is very hard. A grooved and perforated boss is present on the back of the seal.

Material: unfired? Tan steatite

Dimension: 2.05 x 2.7 cm. o.83 to o.86 thickness

Mohenjo-daro. DK 12050

Islamabad Museum NMP 50.296

Mackay 1938: 335. Pl. LXXXVII. 222



Figure 2 Origin of life

It has been expressed that the life has originated with generation of life energy in the cell with genetic recombination.

The origin of life has been expressed by the cell and the leaves on the head of the symbolic Man.

The horned hood expresses the four horned buffalo emitted Rig-Veda 4-58- 1,2,3

The leaves on the head expresses the source of food on the earth is photosynthesis Rig-Veda 1-164-7

The figure wears seven bangles on the left arm and six on the right, with the hands resting on the knees. It has been expressed that the creation is working as a system under the seven visible rays and six

seasons.

The seven they stand on these chariot- seven horses draw it, seven wheeled; seven sister utter songs of praise together, in whom the names of the seven cows are treasured Ṛg.1-164-3

2 1  **It has been expressed that the** three ṣ fourth part of the fundamental energy is above the visible world. The visible world is one-fourth only Rig-Veda 10-90-2,3

The horns - It has been expressed that the three fundamental particles and generation of the energy in the atom is the base of creation.

the four horned buffalo emitted, Rig-Veda 4-58-2

It has been expressed that the photosynthesis has started with origin of life Rig-Veda 1-164-7

2 2  **The genomic chromosome**

It has been expressed that the chromosome has all the information for the life.

2. 3  **The pairing of the chromosome**

The chromosome pairs have been expressed. *Saranyu deserted two twins* Atharvaveda 18-2- 33

2. 4  **The eukaryotic cell**

The synthesis of the cell with nucleus has been expressed.

2. 5  **The gametes**

The formation of the gametes has been expressed.

2. 6  **The crossing over**

The genetic recombination with crossing over has been expressed.

Figure 3 The waves of sweetness



It has been expressed that the waves of sweetness are flowing from the Cosmos.

The white visible light is the source of food on the earth through photosynthesis; it has been expressed by **the leaves** on the head Rig-Veda 4-58-1, 1-164-7

FORTH from the ocean sprang the wave of sweetness: together with, the stalk it turned to Amrita.

3 1  The two helix of DNA can be separated by hitting triple bond in the centre. DNA

The Man with weapon

showing the triplet nucleotide pair in hand

It has been expressed that the two helix of the DNA De oxy ribose Nucleic Acid and the triplet code of the DNA can be separated.

Figure 4 Four horned buffalo emitted - the oil in triple shape



Figure 4 four horned buffalo emitted - the oil in triple shape

This hath the four-horned Buffalo emitted Rig-Veda 4-58-1,2,3

It has been expressed that the building block of the Creation is atom, and the building block of the living-beings is four bases of the DNA Rig-Veda 4-58-3

4 1 **The six spoke wheel ş six seasons**

It has been expressed that the creation is working under the temperature pressure gradient of six seasons ***Rig-Veda 1-164-12b,*** and bio-geo-chemical cycle in the nature Rig-Veda 10-90-16

4 2  *The oil in triple shape, which feed the creation Indra produced one shape, Sūryā another: by their own power they formed the third from Vena Ṛg. 4-58-4*

The three charged particles

4 3  **The tongue - nucleus**

The tongue - the God's tongue is truly Amrita's centre.

That which is holy oil's mysterious title: but the Gods' tongue is truly Amrita's centre Rig-Veda 4-58-1

The space on the mouth shows that the space lying across the universe has formed the nucleus of atom. The three charged

particles together constitute the immortal base of the Creation, with generation of energy in the atom Rig-Veda 4-58-2

Figure 4 4 Structure of DNA - Yama's two dogs



The structure of DNA has been expressed. The two dogs represent two strips of the DNA and the four eyes represent four bases. The Double and the triple bond of the hydrogen have been expressed by the hands, hind limbs, and the mouth.

Yama's two dog four eyed watch the path of man Atharvaveda 18-2- 17

4 5 The elephant ş potential energy



The elephant express the energy at rest - potential energy.

It has been expressed that the energy has two forms potential and the kinetic energy.

Mendel's Laws of Inheritance play major role in the evolution and development of hybrid varieties of the plants and animals. It has been expressed on the seal.



Figure 5 Mendel's laws of inheritance

Phenotypes and Genotypes



It has been expressed that the human -beings have evolved from the single ancestor with genetic recombination under the laws of inheritance. The leaves on the head of the Man are the symbol of food on the earth and the photosynthesis.

The kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot Rig-Veda 1-164-7

The seven figures at the base express the phenotypes and genotypes.

It has been expressed that the creation came into the existence with formation of the atmospheric layers of the earth Atharvaveda 14-1-5

Guarded by covering-arrangements, defended by watchmen (?? bārhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee Atharvaveda 14-1-5

A  **The covering arrangements**

The covering arrangements around the earth have been expressed by the arch Atharvaveda 10-8-36, 1-32-1, 2. The leaves on the arch symbolize the photosynthesis Rig-Veda 1-164-7

Magnetosphere

The one who clothes himself in this earth is earth's magnetic field and one who encompassed the atmosphere is earth's magnetosphere, who protects the earth from the magnetic field of sun and other planets Atharvaveda 10-8-36

Ozone layer

That is not on the earth, nor in the sky, where by the plants breathe. 1-32-1

In the atmosphere is the station of them, as of those sitting wearied; the station of this that exists: 1-32-2

. They have given the way for photosynthesis as the source of food for the living-beings.

B  **Defended by watchman**

It has been expressed that the fundamental energy protects the creation, just like a watchman.

C  **The cell body**

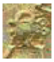
The synthesis of the cell body with nucleus has been expressed.

D 

The Ram with two long curling horns - the wind in motion is thy spirit

It has been expressed that the DNA has spread in the world in restless motion.

11. a body formed for flight hast thou, O charger; swift as the wind in motion is thy spirit.1-163-11

E  **The infant on the stool**

The development of infant in the womb has been expressed.

F  **The seven figures ṣ phenotypes and genotypes**

It has been expressed that the genetic recombination with phenotype and genotype has brought the biodiversity in nature.

Yama beyond, below Vivasvat beyond that do I see nothing whatever; into Yama has entered my sacrifice, Vivasvat stretched after the worlds (bhu). Atharvaveda 18-2-32

It has been expressed that the *Vivasvat (DNA) and the chromosome (yama)* is present universally in the living-beings.

G  The blocks - communities and territories

Figure 6 Organic evolution



Figure 6 Organic evolution

Cat. no. 19 Joint Expedition of the American School of Indic and Iranian Studies and the Museum of fine Arts, 1935 - 1936 @ 1997 Museum of Fine Arts Boston

The incense burner below the neck is symbol of light ṣ it indicates sun as the source of light on the earth.

a.  The two dark globular structures in front of mouth, it is the symbol of synthesis of the coaservates in the beginning of origin of life.

b.  The two forward arching horns, it indicates the two strips of DNA.

C,  The genomic chromosome, it is the symbol of genetic

evolution

d.  The *Pipal leaf* ș it is the symbol of photosynthesis

It has been expressed that the life has originated first in the coaservates. With the synthesis of the chrophyll and genetic material DNA, the cell proceeds forward on the path of organic evolution.

Figure 7 Genetic recombination and evolution

The animal motif with feeding tough



The feeding tough

The seal express that the components of the creation have been synthesized from the eternal fundamental energy, with time they merge into the same. It has been expressed symbolically by feeding tough in the front of mouth.

The two horn like strips with loop

The life has evolved from the DNA, the ribosome translate the DNA code into life. It has been expressed by the two strips and ribosome by loop like structure.

The Wheel with six spokes

It express that the synthesis and degradation is going on under the temperature pressure gradient of six seasons.

Formation of gametes and cell division

The two fish like structure -cell body

The living-beings exhibit same function at cellular level with cell division followed by second division. It has been expressed by two fish like structure with fins. The hood like structureabove the fish indicate the reduction division which leads to formation of gamets.

The Genomic chromosome

The crossing over and recombination leads to evolution and biodiversity in the nature. It has been expressed by arrow.

The symbols above the animal motif shows two helix of DNA ,the ribosome translate DNA code into life, in the cell body, during the cell division, the chromosome undergo pairing,.

It has been symbolically expressed by imaginary human or animal figure on the seals. The Unicorn express the origin of the creation from single ancestor, and humped bull with two horns indicates evolution of the living-beings from two helix of DNA.

The incense burner below the neck of animal motif symbolically express, just like the burner is source of light and energy, in the same fashion sun is the source of light and energy on the earth.
The Sun is the soul and eye of the creation Rig. 1- 115-1

The animal motif with feeding tough in the front of mouth express that the components of the creation are synthesized from the eternal energy, and merge into the same with time.

Figure 8 The group of seals for demonstration



Figure 8

The Man represents eternal fundamental energy, from where the creation came into the existence.

The Unicorn Seal

8 1. The unicorn on the seal express that the creation came into the existence from single ancestor, the incense burner below the neck symbolize the sun as the source of energy, the life has evolved from DNA with genrtic recombination, the genomic chromosome is the carrier of hereditary characters from generation to generation, the natural selection, under the laws of inheritance leads to evolution with biodiversity.

The Rhino Seal

8 2. The Rhino on the seal with two horns with feeding tough.It has been expressed that the components of the creation have been

synthesized from the fundamental energy, and with time, they merge into the same. It has been expressed by feeding tough in the front of animal motif.

The two horns express the two helix of DNA, it has been expressed that living-beings have evolved from single DNA, the ribosome translate the DNA code into life through transfer RNA, it synthesize the genomic chromosome, the genetic recombination leads to evolution with new chromosome pairing.

The man in the arch

8 3. the man standing in the arch, the man symbolically express eternal fundamental energy, the twig on the head symbolize the photosynthesis as source of energy, the projections on the arch represent cristae - oxysomes on the inner surface of mitochondria. it has been expressed that the mitochondria in the cell is the power house of the cell.

8 4. The mini seal

4. The mini seal shows the cell with nucleus, chromosomal crossing over, chromosome pairing, gene interaction and genomic chromosome in the end.

It has been expressed that at the cellular level all organism exhibit same functions, the cell division start from the chromosome and it ends with synthesis of chromosome, during the cell division, the chromosome, under go crossing over, chromosome pairing and natural selection with gene interaction, genotype and phenotype in

the nature.

Figure 9 Power house of the cell Mitochondria

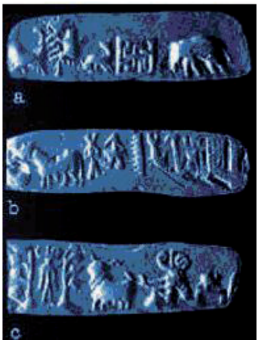


Figure 9 a - the spiral DNA



A  the Spiral model of DNA - the living creatures have been shown with spiral DNA in the centre

B  the swastika

The swastika in clock wise direction with four dots and four frames, it symbolizes the evolution in the forward direction.

Bhaga fashioned the four feet; Bhaga fashioned the four frame pieces (? Usyala; Tvaṣṭā adorned (pic) the straps (? vardhna) along in the middle; let her be to us of excellent omen Atharvaveda 14-1-60

Symbolically the four feet and four frames express the four components of atom, and the four frames express the four bases of the DNA. They constitute the base of the living and non-living objects. The Tvastā is the shaper of the forms with triple bond in the centre of the two strips of the DNA.Atharvaveda 14-1-53

C  the elephant ṣ Potential energy

The elephant on the seal symbolize the potential energy.

Of one the sweep is seen, but his figure Rig-Veda 1-164-44

The life energy-consciousness appears with birth and disappears with end of life.

The life energy- consciousness in the body shows motion but his figure is not seen.

Figure 9 b - the genetic evolution of human- beings - male and female

The symbols exhibit that DNA is the shaper of the living-beings.

Tvaṣṭā the lord hath made all forms and all the cattle of the field: Cause them to multiply for us Ṛg.1-188-9



Figure 9 b - The symbols exhibit that male and female have evolved from the genetic recombination from two different pair of chromosomes xx and xy

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time Rig-Veda 1-164-44

Figure 9 c - the power house



Figure 9 c 1  the power house

Figure 9 c 2  the two long horns are symbol of the DNA as genetic material.

The symbols indicate that the fundamental energy is the power house of the living-beings, and he is defending them just like watchman.

One of them sheareth when the year is ended.

The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy,** during the life it synthesizes the cellular body and the same **disintegrate the body after death Rig-Veda 1-164-44**

Figure 10 the standing man in the arch

A  b 

Figure 10 a the standing man in the arch - the generation of ATP

The arch around the Man is a symbolic expression of single unified force in the centre, and the arch is an electron microscopic structure of mitochondrial cristae, on the inner surface layer of cristae, oxysomes, also known as elementary particles are present. The oxidative electron coupling factor is located in the oxysomes. **It is the power house of the cell and the living-beings.**

Rig-Veda 10-121- 7

A question has been asked that at which time the universal germ of life appear

With mighty waters, and production of energy

What God shall we adore our oblation? Rig-Veda 10-121-8

The answer has been given, He in his might surveyed the floods containing productive force, and generating sacrifice.

It has been depicted on the seal by the symbolic figure of the Man in the middle of the arch, just like surveying the cosmic floods, and looking towards the arch to generate the sacrifice. The knobbed arrow like structure on the arch in series, they represent the

elementary particles on the surface of the inner layer of the cristae of the mitochondria, where oxidative phosphorylation, generates the productive power ATP- Adenosine Tri Phosphate, through the series of ETC electron transport chain, in the mitochondria. The oxidative electron coupling factor is located in the oxysomes- elementary particles. It is the power house of the cell and the living-beings.

Figure 11 Generation of energy in the womb - Consciousness

Rig-Veda 10-121-1- generation of energy in the womb

A  womb ş the generation of the energy in the centre of Nebula, Atom, Cell and the mitochondria has been expressed.

VI B 

Figure ş VI b reverse - Unicorn sealing and pictograph on reverse Harappa Museum H95-2485

a  the figure symbolizes the generation of energy in the womb-centre

b the figure symbolizes the three fundamental particles and generation of energy in the Atom

c  the figure symbolizes the genetic recombination

d  the two figures symbolizes development of the communities and territories.

Figure 12 Life on the earth

Life on the earth- Ozone layer

1. Today it is a scientific fact that ozone layer is present in the upper atmosphere. It absorbs the toxic UV rays. The ozone O_3layer is most important for life on the earth. The ozone has three atoms of oxygen O_3

2. Water is life resource, without water life is not possible. The water molecule consist of two atom of hydrogen and one atom of oxygen= 3

3. The Biological world came in to existence from genetic material DNA. For the function of the DNA in the nature triple bond of hydrogen is important. The hydrogen is also important as a source of energy, at sun's surface hydrogen is converted in to helium H_3



Figure 12  

Masculine sign is indicator of origin

In the picture the fundamental energy has been metaphorically imagined in the form of a bull. The bull symbolically expresses the origin of the creation from the fundamental energy. The two horns symbolically express two helix of DNA, which is universally present in the biological world.

The majestic zebu bull, with its heavy dewlap and wide curving horns is most impressive motif, because the humped bull is recurring theme of art in the Indus regions. The symbols above the animal explore secret of life on the earth.

The bull, the youngling with the hump, hath frolicked, the strong and never-ceasing Calf hath bellowed.

Bringing our offerings to the God's assembly, he moves as Chief in his own dwelling-places Rig-Veda 10-8-2

Two horn indicate-two helix of DNA- It has been expressed that the synthesis of the DNA and its replication is unending process. The DNA moves as chief in the cell body from generation to generation.

The three thick bold lines indicate the role of three-the Ozone, Helium and water in the evolution of the creation and life on the earth.

 The trident indicates the role of triple bond and triplet code in the evolution of living-beings.

The ozone has three atom of oxygen, the source of energy of the sun is mainly due to the conversion of hydrogen in to helium H_3, the replication of DNA in the living-beings is regulated by triple bond of hydrogen, the third essential factor is water, which consist of two atom of hydrogen and one atom of oxygen= total three.

The importance of these three has been expressed in the Atharvaveda.

The three meters the poet extended, the many formed one, the admirable, the all- beholding; waters, winds, and herbs- these are set in one being Atharvaveda 18-1-17

The poet- the fundamental energy has generated the three- *The three meters*, which holds waters, winds and herbs.

The three meters- indicate the origin of triple bond, which has generated the three essential factors, water-H_2O, ozone O_3 in the atmosphere and triple bond of hydrogen in plants- triplet code. They have extended many forms. They all are set in one being- fundamental energy.

These three essential factors have been indicated in the *Ṛbhu sūkta* Ṛg.1-163-1-4, the same has been expressed symbolically on the Zebu bull seal by three thick bold lines.





Figure 13 Triple bond and triplet code

Universal nature of DNA *Viśvarūpa*

May we gain wealth, subduing with thy succour and with the Arya, all our foes, the Dasyu.

Our gain was that to Trita of our party thou gavest up Tvaṣṭā's son Viśvarūpa Ṛg. 2-11-19

The synthesis of DNA and its duplication is mainly dependent on its triple hydrogen bond, it has been expressed through *Trita*-Triple bond, only with the knowledge of *Trita* and its function, it has been established that *Tvaṣṭā* -DNA acts in the nature through *Trita*, due to the triple bond the DNA is universall present.

All the livingbeings have DNA De oxy Ribose Nucleic Acid or RNA Ribose Nucleic Acid, it has been expressed as *Viśvarūpa* of *Tvaṣṭā's* son.

The first cell has been synthesized in the sea water it has been termed as *Ṛbhu.*

1. What time, first springing in to life, thou neighed, proceeding from the sea or upper waters,

Limbs of the deer hardest thou, and eagle pinions, O steed, thy birth is high and must be lauded Ṛg 1-163-1

It has been asked that at what time the *Ṛbhu* has sprang in to life, the answer has been given that life has originated first in sea or in upper water. The life energy is having a speed like an eagle or deer. The birth of life is very high it must be lauded.

2. This steed which, Yama gave hath Trita harnessed, and him, the

first of all, hath Indra mounted.

His bridle the Gandharva grasped. O Vasus, from out the Sun ye fashioned forth the Courser Ṛg.1.163.2

It has been expressed that the Steed of life is *Trita* harnessed, which has been given by *Yama*, it is an indication towards the three stages of life- childhood, young and old age. *The Yama* represents chromosome, the chromosomes have the information for the development of the physical body, as such it has been said that it has been given by *Yama- chromosome,* the life-consciousness has mounted by the *Indra*. The *Indra* represents electrostatic energy, in the early stages due to the movements of the charged particles in the developing coaservates, the life energy has been generated, hence it has been said that *Indra* has mounted first. It has been grasped by *Gandharva the Gandharva* represents viscous mass of the protoplasm. Due to the streaming movements of the protoplasm life energy has its existence in the cell. When the streaming is blocked, the life energy disappears, hence it has been said that the life energy has been grasped by *the Gandharva* just like bridle, the bridle is a metaphor for the life energy. *O Vasus*, it is an expression for the a-biotic substances, which have synthesized the *Ṛbhu*- cell in the water first. The sun is the main energy source on the earth, hence it has been said that the courser-the cell has been fashioned by the sun.

3. Yama art thou, O horse; thou art Āditya; Trita art thou by secret

operation.

Thou art divided thoroughly from Soma. They say thou hast three bonds in heaven that hold thee Ṛg.1.163.3

Yama art thou, O horse; thou art Āditya; Trita art thou by secret operation* -** The *Ṛbhu* are vigorous in nature. Hence the *Ṛbhu* has been termed as steed metaphorically they take part in the creation sacrifice. They came in to the existence from the *Yama*-chromosome and due to the twelve *Āditya*-twelve month's time under temperature pressure gradient, hence it has been said that **thou art *Yama, thou art Āditya.

***Trita art thou by secret operation*-** It indicates the synthesis of *Ṛbhu*-cell under the control of the DNA duplication due to the triple bond of the nucleotide pairs of the DNA. The genetic material, DNA has the information for the synthesis of the cell body. It bears the hereditary characters to synthesize the cell in nature.

Thou art divided thoroughly from Soma. It means the whole synthesis is due to the *Soma*- magnetic energy.

***They say thou hast three bonds in heaven, which hold thee*,** it means ozone layer in the atmosphere, which absorbs the ultra violet rays and due to it the life is present on the earth.

4. Three bonds, they say, thou hast in heaven that bind thee, three in the waters, three within the ocean.

To me thou seem Varuňa, O Courser there where they say is thy sublimate birth place.

It has been expressed that *Ṛbhu*-cell has ***three bonds in heaven***. It indicates the presence of ozone layer in the atmosphere. Due to the presence of ozone layer in the upper atmosphere life is present on the earth. The ozone layer absorbs the high energetic ultraviolet rays and only visible light come on the earth's surface.

***Three bonds in the water*, i**t means two bond of hydrogen, and a single bond of oxygen, they constitute the water molecule. The water is a life resource for the *Ṛbhu*-cell.

The three bonds within the ocean, it means in the ocean of the biological world.

The *Trita*- triple bond of the nucleotide pair of the DNA has the key role in the development of the cell and the evolution of the living-beings.

***To me thou look like Varuṇa*,** it indicates that the cellular mass has come in to the existence due to gravity and aggregation of the materialistic substances as a sublimate unit. Where the courser- life energy has its birth, it suggests that after the aggregation of the materialistic substances in the viscous mass. Due to the streaming movements of the viscous mass, the life energy had been generated.

Figure 14 Development of embryo in the womb

The seal symbolically reflect the development of infant in the womb.

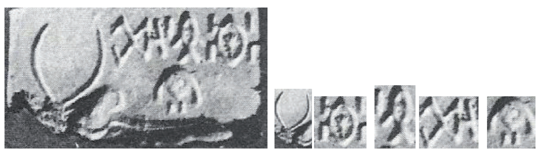


Figure 14

The two horns on ground symbolically indicate the two helix of DNA and in succession crossing over of chromosome, spindle formation and development of embryo in the womb has been shown with gamete and development of infant below the pictographs.

The horn indicates the genetic material as charger Rg. 1-163-11

11. a body formed for flight hast thou, O charger; swift as the wind in motion is thy spirit.

Thy horns are spread abroad in all directions: they move with restless beat in wildernesses 1-163-11

It has been said that *Ṛbhu* has a body formed for flight in nature. The charger is swift like wind, the motion is his spirit. Just like horns, they spread in all directions with rest less beat.

It means the *Ṛbhus*- cells have a charger as DNA with life energy.

The functions of the charger have been expressed as swift like wind in motion, which is the spirit of the cell body. Due to it, the cells have spread in all the directions. It has been expressed through the metaphor of horns. It means their movement is hard to check just like hard horns. They are moving and working in the different forms in a restless manner in the wild and at other places.

XXXX

15 Evolution of the creation from single ancestor

The origin of the creation from a single ancestor has been depicted on the seal by unicorn motif. The inscribed symbols above the animal motif explain the major steps in the evolution of the creation.

The pictograph of the Unicorn with a single horn and an incense burner placed below the neck. The fundamental energy has been imagined symbolically in the form of a mysterious animal. The echo of the mysterious pictograph seal number is coming from the *Ṛg*.4-58. In which the evolution of the creation has been traced symbolically under the holy oil's mysterious title. The same has been depicted on the seal in a symbolic manner.



Figure 15 Evolution of the creation from single ancestor

a.  Origin

b.  Sun as the source of light

c. 

d. 

Milk glands

Origin- A single horn- origin from a single ancestor, male sign indicate origin.

Incense burner on lower side- indicate, sun as the source of energy.

3. The curved lines at base, they are converting in to four at the apex 3+1=4, it indicates three fundamental particles and generation of energy.

4. Milk glands- It indicates that the fundamental energy feed the creation

just like milk of mother feed the infant.

e.  The six spoked wheel indicate the evolution of the creation, under temperature pressure gradient of six seasons.

g.  The three lines indicate the formation of the three fundamental charged particles in the primitive condition of the creation. The three charged particles have generated the five gross elements. It has been indicated by the five lines on the lower side, than in the series DNA, chromosome, gametes and human species has been evolved through inversion and aberration of the chromosome.

The wheel with six spoke indicates that the creation came in to the existence under the temperature pressure gradient of the six seasons in a cyclic manner.

These others say that he, God with farseeing eyes, is mounted on the lower seven wheeled, six -spoked car Ṛg.1-164-12

These others say that the wheel of order is having six seasons with the seven rays of sun, it means the time related with the movement of the sun at its axis has been indicated, where six seasons have two month each *Ṛg.1-164-12b*.

It has been expressed by the wheel with six spokes.

The bull yields the milks for the bull with the milking of the sky, he the unharmable son of Aditi; every thing knows he, like Varuṅa, by thought; he

sharing the sacrifice (yajna), sacrifice to the seasons that share the sacrifice. Atharvaveda 18-1-18

The son of *Aditi* - The *Aditi* represent infinite nature and the sun came in to the existence from the nature-*Aditi*, it has been indicated by the sun of *Aditi.*

The bull yields the bull- The sun came in to the existence from the fundamental energy, the bull is a metaphor for the fundamental energy, from him the sun-bull came in to existence, and it has been indicated. *He- the sun sharing the sacrifice to the seasons that share the sacrifice,* it has been indicated that sun is responsible for change in temperature pressure gradient and seasons, which is responsible for creation sacrifice- *Sṛṣṭi, Yajña***.**

g 

The three lines converted in to five it indicates that in the beginning three fundamental particles electron, proton and the neutron came in to the existence.

Gāyatrī *hath, they say, three bands for kindling: hence it excels in majesty and vigour Ṛg.* ***1-164-25 & A. 9-10-3***

The three lines converted in to five- it indicates that in the beginning three fundamental particles electron, proton and the neutron came in to the existence, they constitute *Aditi*-micro nature from them *Aditi*-infinite nature came in to the existence with five gross elements,-fire-energy, air, water, earth and sky. The living- beings have been expressed as five tribes- *Pañcjana*- the association of five gross elements. It has been

expressed that in this world what is and what is to be is nature only. The concept is synonym to our modern ecological thinking. It has been explained in the Vedic hymns.

Gāyatrī hath, they say, three bands for kindling: hence it excels in majesty and vigor. A. 9-10-3, Ṛg. 1-164-25

Three steps the form (?) ascended, it went (?) after the four footed one (f.) with its course (vṛata); it matches the song (arka) with the syllable; in the navel of right it purifies.Atharvaveda 18-3-40

The three steps- *Trini padanirupo-* it is an expression that in three forms (three fundamental particles), the fundamental energy has appeared; it follows the fourth in its course. It has been indicated that in the pre-cosmic condition the fundamental energy first appeared in the three fundamental particles, which follow the fourth, the generation of energy due to the spinning movements of the electrons around the nucleus. It has been termed as the fourth.

It matches the song with the syllable- it means the energy generated in the nucleus of the atom is similar to fundamental energy, during its course of evolution, through bond energy it bind the atoms.

It matches the song with the syllable, in the navel of right it purifies, it indicate that the nature of the bond energy is the same, which has been generated in the atom first.

With Gāyatrī he measures out the praise-song, Sāma with praise-song, triplet with the Triṣṭup. The triplet with the two or four- foot measure and with the syllable they from seven metres Ṛg.1-164-24

In this stanza in a symbolic fashion the seer has indicated about the

formation of the atoms from the *Gāyatrī* (three fundamental particles). It has been indicated that due to the movements of the electrons, energy gets generated, which has been expressed as *Sāma,* and due to the *Sāma,* the triplet (three) get bind in to the *Triṣṭup (atom)*, accordingly from the triplet two or four and more atoms can be banded by bond energy, it has been indicated by foot and accordingly seven metres can be measured.

It has been indicated in a symbolic manner here that how the atoms, molecules and the matter can be formed in the nature.

With Jagatī the flood in heaven he established and saw the sun in the Rathantara Sāman. Gāyatrī hath, they say, three brands for kindling: hence it excels in majesty and vigour Ṛg. 1-164-25

The Jagatī is the place in the atmospheric ocean, where the high energetic solar winds are trapped by the earth's magnetosphere. The three fundamental particles- electron, proton and neutron have been converted in to the ions. Hence it excels in majesty and vigour. (*Gāyatrī's* three bands are three fundamental particles) Ṛg. 1-164-25

Accordingly from them the *Pañca-mahabhūta*- **five gross elements** fire-energy, air, water, earth and sky-space came in to the existence. The five tribes is a symbolic expression for the *Pañca mahabhūta.*

The germ of the world of the world ensign of all creation, be sprang to life and filled the earth and heavens.

Even the firm rocks he cleft when passing over, when the five tribes

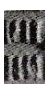
brought sacrifice to Agni Ṛg. 10-45-6

After the formation of five gross elements in the nature, the DNA double helical model has been synthesized. It has been indicated by the fork model of DNA, the synthesis of chromosome from DNA replication has

been shown in the series.

DNA (De oxy ribose Nucleic Acid) with double helical structure.(Rg.10-10- In the funeral hymns it has been said that *Yama's* two bridled dogs with four eyes watch the path of man. *The Yama* represents chromosome with the information of life and death. It consist of DNA, the two strips of the DNA have been expressed symbolically through two dogs and the four eyes represents four bases of the DNA, which record the deeds of a person concern in the language code of the base sequence. It has been expressed by saying that *Yama's* two brindled dogs with four eyes watch the path of man, which will have repercussions in the future birth. It means it is an indication towards the fact that DNA and its language code are immortal.)

h.  Fork model of DNA i.  DNA pachaging

j.  Formation of the gametes k.  chromosome inversion

k.  evolution of man i.   chromosome aberration.

The intermingled forks, it indicates the synthesis of the Chromosome from the DNA with replication. (Atharvaveda 18-2-33)

The four lines above and below- it indicates the formation of the gametes.

Chromosome-*Yama*

They hid away the immortal (bio soul) one from mortals; having made one of like colour, they gave her to Vivasvat, just like his wife; what that was carried also the two aśvins*; and Saraṇyu deserted two twins (Pair of chromosome) Atharvaveda, 18-2- 33*

He is the father of *aśvins* (nucleotide pair) it means aśvins nucleotide pairs have been synthesised from the parent DNA. He is the father of *Yama*- *Yamī* (Twinned pair of chromosome) It means chromosomes have been synthesised from the parent DNA, it has been indicated by saying that *Saraṇyu* deserted two twins, the formation of the chromosome pair has been indicated symbolically.

He is the father of *Manu*-human race. It indicates that DNA is responsible for the evolution of the human species

The human figure- it indicates the evolution of the human beings from the chromosome. The rest three pictographs- it has been indicated that with fertilization, chromosomal inversions and aberrations in the nature the evolution of the living-beings set in motion with mutation.

The whole play of life on the earth is related with the nature and genetic material-DNA. It has been indicated

***Aditi*- Infinite nature**

The living-beings have been expressed as *Pañcajana*-the association of five gross elements. It has been expressed that in this world what is and what is to be is nature only. The concept is synonym to our modern ecological thinking.

Aditi is heaven, Aditi is mid air, and Aditi are the mother the Sire and son.

Aditi is all Gods, aditi five classed men, Aditi all that has been and shall be born Ṛg 1-89-10

Figure 16 The covering arrangements of life

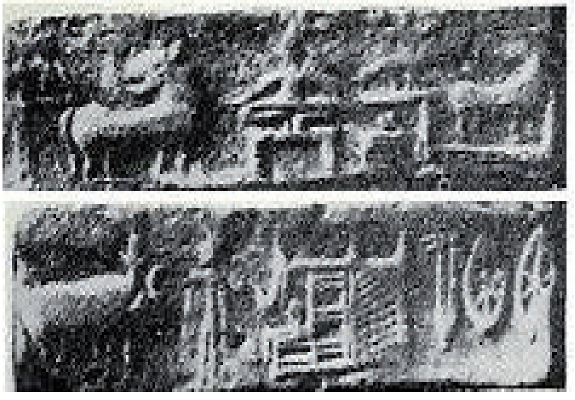




Figure 16 I

a. Puruṣa Puruṣa Sukta Ṛg. 10-90

It has been expressed that the creation has evolved from the cosmic eternal energy - Puruṣa

b. The two animals under the same shaltering tree Ṛg. 1-164-20

It has been expressed that the eternal cosmic energy is the source of consciousness in the cell body, and bio-soul enjoy the fruit of life.



Figure 16 II

The creation came into the existence from the eternal fundamental energy Puruṣa

Whatever is present, and whatever will be is this fundamental energy. It is in the center of all reaction and actions in the creation.

The magnetosphere around the earth has developed from the eternal energy, it act as shield against the strong solar flares, so the eternal energy is just like watch man. (man sitthing with his back towards the web.

The life has evolved from the single DNA through Genomic chromosome, it has been expressed by a animal with single horn looking towards the standing man, and genomic chromosome with two wheel on other side of the web.

The life is guarded by the magnetoshere and ozone layer in the atmosphere, which absorbs the toxic UV rays, and only visible light and infrared rays enter on the earth, it has been expressed by two wheel, the visible light feed the living-beings by photosynthesis, and the third wheel is invisible ozone layer.

They are acting, just like covering arrangements for life. The web is the symbol of protection.

The life supporting system



Figure II. The life supporting system

Guarded by covering-arrangements, defended by watchmen (?? bārhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee.

Figure 16 1 Covering-arrangements



Guarded by covering-arrangements

Atharvaveda 1-32- 3

Atharvaveda One of them clothes him self in this earth; one encompassed the atmosphere; Atharvaveda X-8-36

The one who clothes himself in this earth is earth's magnetic field and one who encompassed the atmosphere is earth's magnetosphere, and ozone layer, who protects the earth from the magnetic field of sun and UV rays, and from other planets

Atharvaveda 10-8-36

Ozone layer

. Rig-Veda 1-164-33

The life on the earth is very much supported by the magnetosphere of the earth and the ozone layer in the middle atmosphere, which absorbs the toxic ultraviolet rays. These are the covering arrangements for life on the earth.

Figure 16 2

I6 2 defended by watchman

16 3   **defended by watchman** - the sitting posture of a man with robe web, it express that the Creation is guarded by the covering arrangements. The arrangements are defended by the fundamental energy, just like a watchman. It has been depicted by a man in sitting position behind the symbolic covering robe web, which symbolizes the covering arrangements and the fundamental energy as watch man.

Figure 16 4 O Soma thou standest

Figure 16 5  **O soma thou standest** - the *Puruṣa*-fundamental energy has been depicted in the *standing* position with animal motif on one side, and the genomic chromosome on the other side.

It expresses that the fundamental energy is in the middle of the Creation.

Guarded by covering-arrangements, defended by watchmen (?? bārhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee.

Life on the earth has been depicted symbolically by horned animal and the genomic chromosome on either side of the fundamental energy.

Figure 16 6 Life on the earth

Figure 16 7  The animal motif with horn is symbol of life

16 8  The genomic chromosome is symbol of life.

Figure 16 9 - the two wheels

The three wheel of sun

the journey of the solar rays from the sun to earth has been expressed by the three wheels

1. Ultraviolet and x rays,

2 visible lights,

3 Infrared rays



16 9 The two wheel - visible light & infrared rays

The two wheel the wheel of visible light and the wheel of infrared rays.

The life on the earth has been expressed symbolically through the genomic chromosome. The visible light and the invisible infrared rays have been expressed by the two wheels symbolically.

Where stood ye for pointing out? 14

''With your three wheeled chariot, to Sūryā's bridal

Where was one wheel of yours'' Atharvaveda XIV-1-14, 16

Figure 16 10 Creation Sacrifice



Figure 16 10 Creation sacrifice

It has been expressed that the creation sacrifice is just like a spider's web, it has threads on every side stretched by the hundred sacred ministers and one (fundamental energy in the middle). The food chains and food webs in the nature has been explained The *sacrifice drawn out with threads on every side, stretched by*

hundred sacred ministers and one,- This do these Fathers weave who hither ward are come : they sit beside the warpand cry Weave forth, weave back.

hundred and one minister are 101 elements of nature, who have spread the food chains and food webs in the nature Rigveda10-130

<u>The Man binds it and Man unbinds it:</u> even to this vault of heaven hath he out spun it. These pegs are fastened to the seat of worship: they made the Sama- their weaving shuttles. Rig-Veda 10-130-1

It has been expressed that the *Puruṣa* - unborn fundamental energy is in the middle for the synthesis and disintegration in the nature. The Bio-Geo-chemical cycles in the nature have been expressed through the pegs and the *Sama* - matter. They are acting just like the weaving shuttles.

Figure 16 11

7 Food chains and food webs



Figure 16 11 food chains and food webs

The chemical energy generates the complex food webs and food chains in the ecosystem. With carbon assimilation, the organic matter glucose moves into the food chains, and food webs.

Figure 17 The **Man binds it and Man unbinds it:**

Electromagnetic bond energy

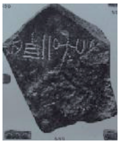


Figure 17 the man extends it and Man unbinds it:

The Man- represents Puruṣa - fundamental energy - The synthesis and disintegration of the matter in the nature has been expressed. The bond energy is an electro magnetic energy; it has been expressed by the Puruṣa metaphorically.

Figure 17 

1  Symbolic man

2  The man binds it

3  The man unbinds it.

4  *the figure symbolizes the Tvaṣṭā DNA*

Tvaṣṭā - the DNA is the shaper of life on the earth; it has been

expressed on the seal by the symbolic duplicating DNA.

Tvaṣṭā the lord hath made all forms and all the cattle of the field: Rig-Veda 1-188-9

The DNA has been termed as Tvaṣṭā; he is shaper of all creatures with multiplication. It has been termed as omni form (*Viśvarupa*); it expresses the universal nature of DNA.

Oxidation and Reduction

A man (pumans), weaves it, ties (it) up, a man hath born it about upon the firmament (naka) Atharvaveda 10-7-43

These pegs propped up the sky; the chants they made shuttles for weaving Atharvaveda 10-7-44

The two mothers

*These sons of yours (**Ṛbhu**) well skilled in work of wondrous power brought forth to life the two great mothers first of all. - Rig-Veda 1-CLIX-3*

It has been expressed that during the evolution of life on the earth, the *Ṛbhu* (Cell) has acquired life through their skill of work. "*They brought forth to life the two great mothers first of all''* it expresses the development of the two reactions oxidation and reduction, they feed the creation just like two mothers.

The seal has figures on both the sides, the depiction of the *Puruṣa-*

fundamental energy in *yogic* posture, it indicates the origin through symbolic masculine symbol on lower side, and evolution of the animals has been shown.

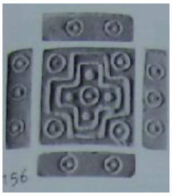
On the other side the origin and evolution has been depicted through the symbolic mysterious animal under six seasons and cyclic reactions. The human figures represent the evolution of living-beings. The trident indicates the importance of the triplet code in development and evolution. The two wheels indicate that the nature is working under seasonal variation of six seasons and cyclic reactions Ṛg.10-90-16. The importance of genomic chromosome has been shown along with wheels.

Gods sacrificing sacrificed the victim: these were the earliest ordinances. The mighty ones attained height of heaven, there where the Sādhyas, Gods of old, are dwelling Ṛg.10-90-16

Figure 18 Model for examination

For examining the students the symbols are given to the students to explain the concern text. He has to pick up the symbol, than only he can give the answer.

Figure 18 Four horned buffalo emitted.



The dot in the centre shows that the Creation came into the existence from the single ancestor.

Higgs; God particle

An invisible **field** lying across the universe give particles their mass, allowing them to clump together to form stars and planets.

The surrounding four dots express the four horned buffalo emitted. It indicates structure of the Atom with generation of the energy, which constitute the base of the creation.

The two circles indicate the formation of atmospheric layers, The four dots on the four corners indicates four base of the DNA, the building block of the living-beings.

The two dots on either side express the two complimentary base pairs of DNA

The function of DNA operate by triplet Genetic code, it has been endicated by 2+1 = 3 dots on one side.

On another side the three dots signifies the triple bond, through which the DNA is working in the nature.

Four are his horns, three feet, two head, seven hands, bound with triple bond the steed roars loudly, the mighty God has entered into mortals Rig. 4-58-3

I invoke the Agni- (fundamental energy) who is the priest, Deva (fundamental particles), sacrificer, and reciter of the Sṛṣṭi, Yajña, which is the treasure of jewels Ṛg.1-1-1

The source of Cosmic World

FORTH from the ocean sprang the wave of sweetness: together with, the stalk it turned to Amṛta.

That which is holy oil's mysterious title: but the Gods' tongue is truly Amṛta's centre Ṛg.4-58-1

It has been expressed that from the ocean of universe the solar winds are the wave of sweetness. It has the stalk of fundamental charged particles. They turned in to *Amṛt*a for the creation with formation of the atom.

In the same fashion the essence of the creation has been described as the four horned buffalo, where four horns are symbolic expression for the three fundamental particles and generation of energy in the atom.

The essence has been termed as *Ghṛta*-clarified butter, it means the essence of the buffalo milk is Ghee. Similarly the four dimensional structure of the atom has the essence of the creation.

In the atom due to the spinning of the electrons around the nucleus

the magnetic energy generates. The magnetic energy in association with the electrostatic energy of the nucleus produces electromagnetic bond energy. It has been expressed as the centre of *Amṛta* for the creation. The nucleus of the atom around which electrons move in the orbits and the magnetic energy generates, the nucleus has been termed as tongue.

The world of living-beings

Further the structure of the DNA De oxy ribose Nucleic Acid has been indicated through the four horned buffalo, which has four horns four bases with two head- two strips and three legs represents triplet code of three bases known as genetic code, and seven hands indicate seven bonds (two double bond and a triple bond) in between triplet nucleotide pair Ṛg.4-58.

Universal nature of DNA

The genetic material DNA is present universally in all the living beings. It has been expressed as shaper of all the creatures. It has all the information of life. The universal nature of DNA has been expressed in this manner.

Tvaṣṭā the lord hath made all forms and all the cattle of the field:

Cause them to multiply for us Ṛg.1-188-9

The DNA has been termed as *Tvaṣṭā*, who is shaper of all creatures with multiplication, hence it has been termed as omni form (*Viśvarupa*), it means the DNA is present in all the living beings.

For Tvaṣṭā, he who knows each sacred song, brought thee to life,

pre eminent o'er all the things that are.

It has been expressed that Tvaṣṭā – DNA is a supreme genetic material, which the source of life and it bears the information of life and death.

Time-Kāla - The wheel of order

Twelve are the fellies, and the wheel single; three are the naves. What man hath understood it?

Therein are set together spokes three hundred and sixty, which in nowise can be loosened Ṛg. 1-164-48

The importance of the Time-*Kāla* has been explained through the *Sāṁvatsara Kāla-* year, it has twelve months with three hundred sixty days. It is related with the rotation of the sun at its axis with three centres - Sky, atmosphere and earth

This *Kāla*- time is rolling round the heaven. It is the wheel of order.

XXXX

16. Cytology and Geneti

Figure 1 DNA replication



DNA replication

a.  **The atoms have synthesized the DNA and the chromosomes.**

b.  It is the universal source of life with DNA replication in series with cell division.

c.  **The wheel expresses the life cycles of the living-beings,** under the temperature gradient of the six seasons in cyclic manner.

Figure 2 Cell division metaphase stage



a.  the chromosome with chromonemata

b.  **the metaphase stage**

c.  **Chromosomal crossing over**

d.  the nucleotide pairs on DNA

Figure 3 Meiotic crossing over

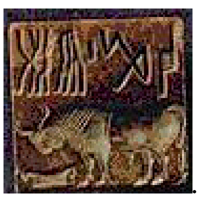


Figure 3 Meiotic stage with crossing over & Recombinant DNA

a.  **The crossing over** - the chromosomal crossing over during the meiotic cell division. The chromosomal crossing over is the exchange of genetic material during the prophase stage.

b.  **the DNA replication**

c.  **the recombinant DNA** - during this the genetic material is broken and then joined to the different DNA for the genetic recombination.

Crossing over was first described in theory by Thomas Hunt Morgan.

Figure 4 Synapsis formation

Figure 5  Synapsis formation

The figure shows the stages during the meiotic crossing over.

During this the genetic material is broken and then joined to different DNA. During the crossing over the homologous chromosomes come close to form the pair, it is synapsis, then after pairing the two chromosomes surrounded by protein structure form, synaptonemal complex, and separated with recombination.

a.  **pairing of homologous chromosome synapsis**

b.  the synaptonemal complex.

c.  the chiasmata formation

d.  recombination

e.   The modern model for comparison

f.  the crystallography image of DNA, - the crystallography image of DNA and DNA replication on either side

Figure 5 The tetrahedral hydrogen bond



6 The tetrahedral hydrogen bond and water molecule has important role in nuclear reactions.

The nuclear reactions are driven by the tetrahedral arrangement of the Hydrogen bond and the water molecule. It has been shown by the hexagonal model in the beginning.

a.  **tetrahedral arrangement of hydrogen bonds about each water molecule**

b.  the modern snowflake model to show the arrangement of hydrogen bonds about each water molecule.

Work *Strena seu de Nive Sexangula* (1611) that the hexagonal symmetry of snowflake crystal was due to a regular packing of spherical water particles.

Nucleic Acid functions

c.  **The ribosome translate the DNA code into life**

The ribosome attached with the replicating DNA to translate the DNA code into life, and mRNA carries the message for the protein synthesis and the DNA replication.

d.  **the messenger RNA** carries the message for the protein synthesis.

e.  the DNA replication

f  the chromosomal crossing over

g.  the genomic chromosome

Figure 6 DNA replication and protein synthesis

DNA replication

The figure expresses the DNA replication, the ribosome translate the DNA code into life with pachaging of DNA with protein synthesis.

Figure 6 the components of the nucleic Acid



a.  mRNA

b.  the Ribosome translate the DNA code into life c.

c.  c DNA

d.  duplicating DNA

Figure 7 Packaging of DNA the nuclear reaction

 **Figure 22 Packaging of DNA**

a.  the duplicating DNA

b. The attachment of the DNA with ribosome

c.  spirally coiled DNA with ribosome packaging

Figure 8 **Modern concept of biotechnology**

The gene technology is the technique of gene manipulation, by which manipulated genes are inserted in to DNA of the other organism for required characters.

For the development of transgenic species the knowledge of cell biology, principles of genetics, hybridization, crossing over during meiosis. If one knows the function of DNA, and the role of genetic code and role of triple bond of hydrogen, he can develop the transgenic animals.

As we have observed after the discovery of DNA by Watson and

Crick. We can trace it on the inscribed objects and pictographs in a systematic manner.

Figure 8 DNA replication & insertion of gene

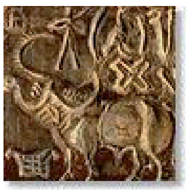
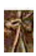


Figure 8 DNA replication and insertion of gene

The insertion of the foreign gene has been demonstrated by a loop like structure in between the replicating strips on the neck symbolically.

a.  the crossing over with insertion of gene

b.  the gene

c  the instrument for the insertion of gene

d  insertion of gene

e  the genomic chromosome

f  the gene modification

Figure 9 long coiled chromosome

Figure 2 

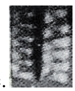
Figure 9 long coiled chromosome

The half animal and a female human figure is a symbol of genetic recombination through implantation of a modified gene from out side, on the head two curved horn is a symbol for the two helix of DNA, which produces long chromosome fibril. It has been expressed by the emerging fibril from the head. In the series chromosomal inversion and RNA with nucleotide has been depicted. The implantation of the gene has been expressed by the injection like tube above the hand, and by the mark on the hip of the animal. The position of ovary has been depicted on hip, to implant the gene in the womb.

a.  thread like chromosome fibril from the DNA

replication

b.  chromosomal inversion

c.  the symbol of single strand of DNA with projected nucleotides.

d.  the symbolic implantation of gene

e.   figure showing the position of the ovary

Figure 10. implantation of gene in the womb



a. 

b.  Genomic chromosome

 development in the womb

Figure 3 implantation of gene in the womb

The implantation of desired gene has been indicated symbolically with development of the embryo in the womb from the gametes, the genomic chromosome can be implanted in the womb with gene technique, it has been expressed by a needle on the hip.

The pictograph indicates that desired gene can be implanted in the womb.

Figure 11 Modification of Genomic chromosome

The chromosome can be modified; it has been reflected on the seal



Figure 11

The mysterious animal- fundamental energy, the incense burner indicates the sun as source of energy and evolution of the creation. Above the animal genetic sequence shows the trident like

a.  single stranded DNA.

b.  The gametes and the genomic chromosome indicate the incorporation of a new gene with gene interaction

c. Gene with protein black spots

c.  cell body

Figure 12 Triplet code and seven bonds

Role of triple bond and triplet code in biotechnology

 a.  **Triplet bond and seven bonds**

Figure 12

The trident indicates the triplet code and above it seven projections indicate two double bond of hydrogen and one triple bond of hydrogen, present in between triplet nucleotide pair.

b.  **Triplet code**

Three head indicate - a triplet code, each head with two long and one short horn – it indicate that each triplet has a triple bond of hydrogen. The three head represent the role of triplet code in biotechnology.

Lord of the dwelling, he subdued the demon who roared aloud, six eyed and triple headed.

Trita made stronger by the might he lent him, struck down the boar with shaft whose poison was iron Ṛg.10-99-6

Well skilled to use the weapons of his father Āptya urged on by Indra fought the battle then Trita slew the foe seven rayed three headed and freed the Viśvarūpa of the son of Tvastā Ṛg.10-8-8.

The release of the *Viśvarūpa* indicate the release of mRNA from DNA, through it the DNA exhibit its universal nature. It has been indicated symbolically that the triplet code generate, due to the separation of triplet nucleotide pairs of DNA through breaking of seven bonds-the two-double and a single triple bond with hydrolysis.

The weapon of *Trita* is bond energy; it has been indicated by *Indra*-electrostatic energy and *Āptya* water. The triplet code generates due to the separation of triplet base code through the breaking of the two double and a single triple hydrogen bond with hydrolysis. *Indra* fought the battle then *Trita* slew the foe seven rayed three headed- triplet. The breaking of the bonds and the removal of the triplet code has been indicated symbolically, through the seven rays and three head. Accordingly *Tvaṣṭā's Viśvarūpa*-the omni form nature has been expressed due to the duplication of the DNA in a systematic manner. The DNA is universally present in the living organisms. It acts in the nature through the chromosome-*Yama* and new DNA from the DNA template *Vivasvat.* In this fashion the DNA spread in all the directions in the living-beings. It has been expressed as the cattle's

of the son of omni form *Tvaṣṭā* symbolically. The *Trita* freed the cattle's of *Tvaṣṭā* - It indicates the replication of the DNA with breaking of the triple bond with hydrolysis.

Lord of the brave Indra cleft him in pieces, who sought to gain much strength and deemed him mighty. He smote his three heads from his body seizing the cattle of the omni form Tvaṣṭā Ṛg. 10-8-9

The lord of brave *Indra* is a symbolic expression for the activity of the bond energy. The synthesis and duplication of the DNA molecule depends on the breaking of the hydrogen double bond and Triple hydrogen bond energy. The triple bond of the hydrogen is strong and mighty. It binds the nucleotide pairs in the DNA with strong hold. The removal of the triplet code has been indicated metaphorically that lord of brave *Indra* cleft him in pieces. He smote his three head is a symbolic expression for the removal of triplet code. The seizing the cattle of the omni form *Tvaṣṭā i*s a symbolic expression for the locking up of the DNA replication by the triple hydrogen bond.

Well skilled to use the weapons of his father Āptya urged on by Indra fought the battle then Trita slew the foe seven rayed three headed and freed the cattle's of the son of Tvastā Ṛg.10-8-8.

The release of the cattle's indicates the release of the mRNA from DNA, which takes part in protein synthesis through the genetic code. The triplet code generates due to the separation of triplet base

through breaking the two-double and a single triple bond.

The weapon of the *Trita* is a bond energy, which is represented by *Indra and Āptya*- water. The triplet code generates due to the separation of triplet base through breaking of the two- double and a single triple bond with the help of water, the same has been expressed as seven rays-seven bonds. The bond energy play its role with the help of Indra- electrostatic energy and *Āptya*, water, it has been indicated. In this fashion through translation from the mRNA protein synthesis is there and accordingly *Tvaṣṭā's viśvarūpa*, the omni form nature expressed. It acts in the nature through *Yama*-chromosome and new DNA from the DNA template-*Vivasvat,* which has been spread in all the living organisms. It has been expressed as the cattle's of the son of *Tvaṣṭā* symbolically.

Figure 13 Model of tRNA & recombinant DNA

The recombinant DNA & DNA repair protein at work.



a.  **recombinant DNA**

b.  **Protein at work DNA repairing black lining**

XXXX

17. The Chromosome

Carrier of the hereditary characters

Modern concept

All the living creatures exhibit the same functions at the cellular level, under which energy transformation, growth and reproduction are their natural qualities. In all the living-beings RNA-Ribose Nucleic Acid or DNA-De-oxy Ribose Nucleic Acid is the main genetic material, which decides the course of life. The credit for discovering the De-oxy Ribose Nucleic Acid goes to the Watson and Crick. It has brought a revolution in the field of biotechnology.

In the biology it is a kwon fact that in the human-beings there are 23 pairs of chromosomes, in which one pair *xx, or xy*, which decides the gender and one pair of chromosome have the information for the life and death. It regulates the life through the genetic hereditary characters. The chromosomes consist of DNA a characteristic feature of the DNA is the fixed content and sequence

of nucleotide pairs along the entire length of its double helix. In this respect any one species of DNA differ from the other species. Accordingly the species diversity is there in the nature with different hereditary characters. A definite number of nucleotides constitute a gene, which have the information about the synthesis of specific kind of the proteins and the enzymes regulate the metabolic reactions.

The DNA is having only four types of bases Adenine, Guanine, Thymine and Cytosine they are arranged on the DNA spiral strips in different sequences. The two base Adenine and Guanine are known as purine and two base Thymine and Cytosine are known as pyrimidine, purine and pyrimidine are complimentary with each other, such as Adenine= Thymine and Guanine ≡ Cytosine and vice versa. These complimentary bases are bind with each other by hydrogen double bond and triple bond. The sequence of three bases, called a triplet known as codon, with four kinds of bases in the DNA. There are 64 codes, which are known as genetic code, which is a code for amino acid and constitute a language code for the protein synthesis. The DNA through transcription synthesise messenger Ribose Nucleic Acid-mRNA and mRNA through translation synthesise proteins. The same is the subject matter of Vedic texts, which has been explored through the metaphors.

Figure 1 De oxy ribose Nucleic Acid DNA *Tvaṣṭā*

The genetic material DNA is present universally in all the living

beings. It has been expressed as shaper of all the creatures. It has all the information of life.

Tvaṣṭā the lord hath made all forms and all the cattle of the field: Cause them to multiply for us Ṛg. 1-188-9

The DNA has been termed as *Tvaṣṭā*, who is shaper of all creatures with multiplication, hence it has been termed as omni-form (*viśvarupa*). It means the DNA is present universally in the living-beings.

Four are his horns, three are the feet that bear him; his heads are two, his hands are seven in number.

Bound with a triple bond the Steer roars loudly: the mighty God hath entered in to mortal's Ṛg.4-58-3

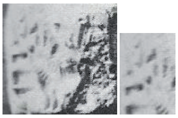
A The four horns represent şfour base of the DNA.



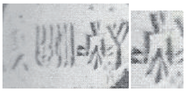
B Three legs represent triplet Genetic code



C Two head represent two helix of DNA



D The seven hand represents seven bonds in between triplet nucleotide pair of DNA



The two double bond and triple bond in the center

The DNA replication is regulated by hydrogen triple bond, it moves from generation to generationwith DNA replication. It has been expressed by saying *Bound with a triple bond the Steer roars loudly: the mighty God hath entered in to mortal's*



The conservative, semiconservative, and dispersive model of the DNA replication has been expressed.

Yama beyond, below Vivasvat, beyond that do I see nothing whatever; into Yama has entered my sacrifice, Vivasvat stretched after the worlds (bhū). Atharvaveda 18-2-32, it indicates the universal presence of DNA in the living-beings.

Figure 2 ***The sinīvālī*** **DNA Replication**

The DNA duplication as described in Ṛg.2-32-7 has been depicted on the seal symbolically.



..Broad hips

Figure 2 a DNA duplication

The two types of cell division and two different type of chromosome have been depicted. The DNA replication has been described through the metaphor of Sinīvālī Queen of men.

It has been expressed that during the cell division, cell divide twice, first division is followed by second division. The chromosomes are of two types, they under go crossing over in the womb with DNA replication.

With lovely fingers, lovely arms, prolific Mother of many sons-

Present the sacred gifts to her, to Sinīvālī Queen of men Ṛg.2-32-7

The structure of the duplicating DNA has been expressed symbolically through *Sinīvālī.* She is broad hipped, fair-armed, fair-fingered. The broad hips represent a loop of the DNA and the two separating strips have been termed as fair arms and the projecting nucleotides have been termed as her fingers. She is *mother of many sons*; it means she is related with the progeny.

Her Sinīvālī her Gungu, her Rākā, her, Sarasvati, Indrani to mine aid I call, and Varunani for my weal. Ṛg.2-32- 8

a. The Sinīvālī has been invoked with *Rākā, Kuhu- Gungu and Sarasvati*, where *Rākā* represents full moon. It means a loop of the DNA is like a full moon. *Kuhu* and *Gungu* represents first day of moon, it means the separating DNA exhibits crescent shaped structures, they looks like first day of the moon. *Rākā* has been invoked for a good son, it indicate that during the separation DNA strips in the womb, the code which open is for thought energy of a particular ancestor, accordingly, she has been invoked with *Sarasvatī*-thought energy.

c.  **pair of chromosome**

d. **Chromosome-Yama -** The DNA synthesize the chromosome, it has been indicated symbolically by saying that *Saraṇyu deserted*

two twins (Pair of chromosome). All the functions of the living-beings are related with the chromosome.

They hid away the immortal (bio soul) one from mortals; having made one of like colour, they gave her to Vivasvat, just like his wife; what that was carried also the two aśvins; and Saraṇyu <u>*deserted twins*</u> *(Pair of chromosome). Atharvaveda, 18-2- 33*

e. DNA - two four eyed dogs

Run thou past the two four eyed brindled dogs of Saramā, by a happy road; then go unto the beneficent Fathers, who revel in common revelry with Yama. Atharvaveda, 18-2-11.

The structure of the DNA has been expressed symbolically through *Yama* (chromosome), the *Yama's* two brindled dogs four eyed watch the path of man, it means they represents two helix of the DNA and the four eyes represents two base pairs, they watch the path of man. It means the life of an individual is regulated by the information, which is there in the coded language of the DNA. It has been said that O king of life-*Yama*-chromosome, guide him for well being and freedom from disease. It means all information about the life is in the chromosomes.

f. Function of the chromosome-Yama

Beautifully in a lucid manner the function of the chromosome-*Yama* has been explained that for the function of the chromosome in the body *soma* purifies it self, the *soma* signifies life energy,

which generates in the body at its own for *Yama*-chromosome, in turn the chromosome grasp the oblation for its functions, and the *Agni*-metabolic energy get satisfied. It means without life energy and metabolic energy the chromosome is inactive.

For Yama the soma purifies it self, for Yama is made the oblation, to Yama goes the sacrifice, messenger by Agni, made satisfactory. Atharvaveda 18-2-1

In the biology it is a kwon fact that in the human beings there are 23 pairs of chromosomes, in which one pair *xx, or xy*, which decides the gender and one pair of chromosome have the information for the life and death. The chromosomes consist of DNA. The chromosome regulates the life through the Genetic hereditary characters. Hence, it has been expressed that all the functions of the body are for the chromosome.

g. Chromosome as fore father

It has been indicated that chromosome in the body is carrier of the hereditary characters from our forefathers from generation to generation the chromosome is transferred through reproduction. In this way whatever, we offer to the body as food is an offer to *Yama* – chromosome and to the forefathers, who are the path finder for us.

Offer you to Yama most honeyed, and stand forth; this homage to the former ṣ born, the former, the path making seers. Atharvaveda

18-2-2

h. Chromosome-Yama- The source of long life

It has been indicated that for the long life chromosome is responsible, the chromosome- *Yama* offer nourishing sap to the body just like fatty milk, among the living-beings, he furnishes long life times to us, for living on. It means the chromosome has the information for life and death.

To Yama the king offer you an oblation, milk rich in ghee; he furnishes to us among the living a long life-times, for living on. Atharvaveda 18-2-3

The king of life-*Yama*- chromosome offer the nutritious sap to the body through metabolic reactions in the body, he extend the life times among the living-beings, to live on.

The chromosome is a long coiled structure, their structure is visible only during cell division, and they have all the information for growth and development of body. Where the cell cycle start from chromosome and end with synthesis of chromosome.

It has been indicated graphically on the seal in a symbolically graphic manner.

Figure 3 Synthesis of Genomic Chromosome



The chromosome constitutes a series from generation to generation. The whole play of life on the earth is related with the chromosome. The cell division in the living-beings start from the chromosome and it end with synthesis of chromosome. It has been expressed on the cell by depicting genomic chromosome in the beginning and in the end.

Figure 4 The watch man of Life-DNA

The DNA is the main genetic material in the living-beings, it regulates the life cycle with information within it, simultaneously it records the deeds and thought of an individual in its language code, hence the DNA has been termed as watch man of life. It has been expressed on the seal by the Dog looking over the living-being.

DNA is regulator of life.



Figure 4

The Dog-*Yama's two brindled dog, watch the path of man*

The two dogs symbolically represent two helix of the DNA, which carries the hereditary characters from generation to generation.

Symbol of *Swastika*- clockwise and anti clock wise, it expresses the

progressive and retrogressive evolution in the nature.

Run thou past the two four eyed brindled dogs of Saramā, by a happy road; then go unto the beneficent Fathers, who revel in common revelry with Yama. Atharvaveda, 18-2-11.

What two defending dogs thou hast, O Yama, four eyed, sitting by the road, men watching, with them, O king, do thou surround him; assign to him well being and freedom from disease. Atharvaveda, 18-2-12.

The chromosome consists of DNA, it has been termed as Yama, and the two helix of the DNA have been expressed by the *Yama's* two brindled dogs. The four eyes is a symbolic expression for the base pairs of the DNA. A = T, G ≡ C. They watch the path of man. With this it has been expressed that the DNA regulate and control the life cycle of an individual. It carries the information from generation to generation. Hence it has been said that O king of life *Yama*- chromosome, guide him for well being and freedom from disease.

Broad nosed, feeding on lives, copper colored, Yama's *two messengers go about after men ((*Jana*); let them give us back here today excellent life(*as*) to see the sun.* Atharvaveda*, 18-2-13*

It has been expressed that *Yama's two messengers go about after men.* The two messenger are two strips of DNA, which through

hereditary characters regulate the physical development of the body, and in its language code it records the deeds of an individual, which go about after a man.

It has been expressed that after the death of an individual, the language code of his deeds on the DNA is imperishable, which give him back the life, through opening of the same language code on the duplicating DNA in the womb. Where the development of the body is according to the hereditary characters, and thought energy of previous birth through the language code of the DNA decides the course and fate in life.

Figure 5 DNA replication and protein synthesis

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty Rig-Veda 1-CXVIII-1

It has been expressed that the speed of DNA replication with triplet genetic code is swifter than the human mind in multiple direction. **,**



Figure 5 a 

The eternal fundamental energy has been depicted symbolically to demonstrate the origin of the creation from single ancestor. It has been expressed by single horn.

The incense burner signifies sun as the source of light and energy on the earth. The water droplets on the burner, it is to demonstrate that first water was formed in the early primitive condition of the earth.

The three lines on the body converting into four, it has been expressed that the three elementary particles with energy constitute the atom it is the building block of the creation.

The DNA is building block of the living-beings. It has been expressed by the model of DNA with protein synthesis.

a 

The DNA duplication and protein synthesis has been expressed.

During the cell division the chromosome, undergo pairing. The chromosomal inversion leads to evolution, the genomic chromosome can be modified with tryotophan gene during cell division and genetic recombination.

b  **Chromosome inversion**

c.  **The crossing over**

d.  **The insertion of tryptophan gene on the chromosome**

e.  **The cell division first and second**

The cell division in the living beings has been indicated by fish like figure. In the Vedic hymns, it has been expressed by renewal of parents.

In the Vedic hymns, the cell has been termed as *Ṛbhu* and the different stages of the cell have been termed as *Ṛbhu, Ṛbhukṣan Vibhvan and Vāja.*

The Nucleus has been termed as *Bṛhaspati,* the DNA has been termed as *Tvaṣṭā* and *Vivasvat, chromosome has been termed as Yama* the cell division has been expressed as re newel of parents.

6. The sacrifice ladle, wrought newly by the God Tvaṣṭā's hand (DNA) Four ladles have ye made thereof.

The sacrificial ladles (developing cell) was made new by *Tvaṣṭā*-genetic material, it means first genetic material has been synthesized in side the cell, it has given the capacity for cell division during the primitive anaerobic conditions and in turn the cell has been divided in to four.

f.  **The incense burner with water droplets** - The incense burner symbolizes sun as the source of light and energy, and the water droplets symbolize that first water was formed in primitive condition of the creation

The water molecule consists of H2O, it has been expressed by <u>three warm the Earth</u> while holding water reservoir, and from their separation came the letter, <u>Two of these</u> convey the murmuring moisture <u>H and OH^-</u> ions Rig-Veda 10- 27-23.

For life on any planet water is an essential factor. It has been expressed by the droplets on the incense burner, the burner symbolicall express the sun as the source of energy in the creation.

After the formation of water in the primeval condition than in the series other substances of the creation came in to the existence Atharvaveda 19-6-11

They sprinkled with early rain (Pravrsa) that sacrifice, Puruṣa, born in the beginning, therewith the gods sacrificed, the Perfectible (sādhya) and they that are Vasus- Atharvaveda 19-6-11

g.  The evolution of the living-beings proceeds forward with hybridization, crossing over and cell division.

Figure 6 Chromosome pairing



The seal express the evolution of the living-beings from DNA, where DNA divides with complimentary base pais, the ribosome translate the DNA code into life, the chromosome undergo pairing and crossing over in the cell, which leads to evolution.

Figure 7 Eight Nucleate embryo sac and gene transfer

 a.  b. 

Figure 7

Development of eight nucleate embryo sac during fertilization and the transfer of tryptophan gene

The two horns - two helix of DNA

It has been expressed that the living-beings have evolved from the DNA under the temperature pressure gradient of six seasons with DNA replication, and genomic chromosome.

During the fertilization, it produces eight nucleate embryo sac, it is followed by double fertilization and triple fusion. In this stage the tryptophan gene can be transferred for the desired characters.

Figure 8 Structure and function of DNA Yama's two Dog

The evolution of the creation from symbolic Man has been expressed.

The two Dogs represent two helix of DNA, which is universally present in the living-beings.

It has been expressed that DNA is working through Double bond and triple bond, where ribosome translate the DNA code into life, the triple bond regulate the DNA replication, it leads to the synthesis of genomic chromosome, it has produced two different types of chromosome and gamets with gentic recombination, accordingly from two different chromosomes the male and female human species have evolved.



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Structure and function of DNA

A  **Symbolic Man - Showing origin of the Creation from the fundamental Energy**

B **the symbolic DNA – the two dog expresses the two helix of DNA, and the eyes express the base pairs.**

C   **Triple bond and double bond -** It has been expressed by the action of hind limbs and the mouth of the

Dogs on the seal.

The Dog- "Yama's two brindled dog watch the path of man"

The two dogs symbolically represent two helix of DNA, the nucleotide pairs are attached with each other by the hydrogen double bond, and triple bond.

The genetic sequence is showing

D  **the ribosome translate the DNA code into life**

E  **the triple bond – it symbolize that triple bond regulates the replication of the DNA**

F  **DNA replication – it symbolize that the DNA synthesizes the genomic chromosome.**

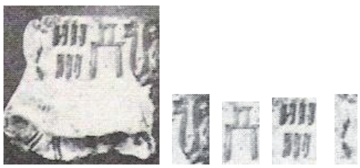
G  **the genomic chromosome – it symbolize the growth of the genomic chromosome.**

H  **the gametes – it symbolize that the two types gametes are formed from two different types of chromosomes.**

I  **chromosomal inversion - the chromosomal inversion has been depicted, which leads to evolution with genetic recombination.**

J  **Evolution of human species Male and**

Figure 9 Gametes from Genomic chromosome



A single chromosome and gametes from DNA through genomic chromosome has been indicated.

Figure 10 Food chain

Symbolically food chain has been expressed with primary producer - plant as primary source of food. It has been expressed that the food is source of metabolism, and cell division with genrtic recombination, which lead to evolution.

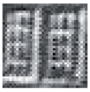
 a.  b  c.  d. 

Figure 10

Figure 11 the development of communities and regions



a.  single strand of DNA b.  Genomic chromosome c cccc

c.  communities and territories

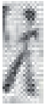
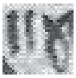
Development of communities and regions

It has been expressed that life has evolved from the single DNA strand, which leads to evolution of chromosome and gamets with genetic recombination, accordingly the biodiversity with communities and regions have evolved.

Figure 12 Evolution of Man- through gametes



Figure 12

a.  human species b.  crossing over

The human figure indicates evolution of the human-being from the gametes and crossing over of the chromosome.

c.  Three blocks and a pillar- it indicate the evolution of the creation with generation of energy in the atom, under space, time and Environmental condition (three subatomic particles and energy Ṛg. 4-58-2 four horned buffalo emitted)

They have synthesized the two helix of DNA it has been expressed by two parallel lines by the side. Accordingly the human species has evolved from two different chromosomes with genetic recombination.

Three steps the form (?) ascended, it went (?) after the four footed

one (f.) with its course (vṛata); it matches the song (arka) with the syllable; in the navel of right it purifies.Atharvaveda 18-3-40

The three steps- *Trini padanirupo*- it is an expression that the three forms (three elementary particles), he – the fundamental energy appeared; and it follows as the fourth in its course. It has been expressed that in the precosmic condition the fundamental energy first appeared in the three fundamental particles, which follow the fourth, the generation of energy due to the spinning movements of the electrons around the nucleus has been termed as the fourth, the energy which bind the nucleus is unified.

It matches the song with the syllable- it means the energy generated in the nucleus of the atom is similar to fundamental energy, during its course of evolution, through bond energy it bind the atoms.

It matches the song with the syllable, in the navel of right it purifies, it indicate that the nature of the bond energy is the same.

With Gāyatrī he measures out the praise-song, Sāma with praise-song, triplet with the Triṣṭup. The triplet with the two or four- foot measure and with the syllable they from seven meters Ṛg.1-164-24

In this stanza in a symbolic fashion the seer has indicated about the formation of the atoms from the *Gāyatrī* (three fundamental particles). It has been expressed that due to the movements of the electrons around the nucleus, the *Gāyatrī three* elementary particles

extend their sphere with bond energy, just like song in the form of diatomic, triatomic, tetra atomic or so.

It has been expressed in a symbolic manner that how the atoms, molecules and the matter can be formed in the nature.

With Jagatī the flood in heaven he established and saw the sun in the Rathantara Sāman. Gāyatrī hath, they say, three brands for kindling: hence it excels in majesty and vigour Ṛg. 1-164-25

The *Jagatī* is the place in the atmospheric ocean, where the high energetic solar winds are trapped by the earth's magnetosphere. The three fundamental particles- electron, proton and neutron have been converted in to the ions. Hence it excels in majesty and vigour. (*Gāyatrī's* three bands are three fundamental particles) Ṛg. 1-164-25

Figure 13 Creation sacrifice- *Sṛṣṭi Yajña*

The bull yields the milks for the bull with the milking of the sky, he the unharmable son of Aditi; every thing knows he, like Varuṇa, by thought; he sharing the sacrifice (Yajña,), sacrifice to the seasons that share the sacrifice. Atharvaveda 18-1-18

The son of Aditi- The Aditi represents infinite nature and the sun came in to the existence from nature-Aditi, it has been indicated by the son of Aditi.

The bull yields the bull- The sun came in to the existence from the fundamental energy, the bull is a metaphor for the fundamental

energy, from him the sun-bull came in to existence, and it has been indicated. He-the sun sharing the sacrifice to the seasons that share the sacrifice, it has been indicated that sun is responsible for change in temperature pressure gradient and seasons, which is responsible for creation sacrifice - *Sṛṣṭi, Yajña.*

I invoke the Agni- (fundamental energy) who is the Deva (fundamental particles), sacrificer, and reciter of the Sṛṣṭi, Yajña, which is the treasure of jewels,

It means every thing, which is present in the creation is due to the fundamental energy.

13 Fundamental energy- Oblation holder

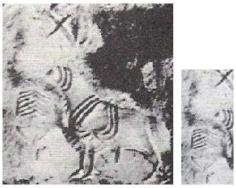


Figure 13

Fire-- energy as oblation holder, it indicates that originator and destroyer in the creation is one and the same fundamental energy Ṛg. 10-8-6

It has been expressed as *bull yielded the bull Atharvaveda 18-1-18*

Symbolically the fundamental energy has been depicted through the animal figure, the incense burner on the lower side represent

sun as the source of light. The pictograph indicates that the components of the creation have been synthesized from the fundamental energy and they merge into the same with time Ṛg.10-8-6 & Ṛg.10-90-16 &10-130-2

The Puruṣa -fundamental energy extend it and the Puruṣa unbind it: even to this vault of heaven hath he out spun it Ṛg.10-130-2a

The Bull- fundamental energy has been depicted symbolically as raising the head upward to grasp the oblation. Symbolically, it has been indicated that synthesis and degradation is law of nature, all the components of nature are synthesized from the fundamental energy and merge in to the same with degradation. The same is the generator and oblation *holder.*

Reference-

Thou art the Leader of the rite and region, to which with thine auspicious teams thou tendest.

Thy light-bestowing head to heaven thou liftest, making thy tongue the oblation bearer, Agni Ṛg. 10-8-6.

The bull yields the milks for the bull with the milking of the sky, he the unharmable son of Aditi; every thing knows he, like Varuṇa, by thought; he sharing the sacrifice (Yajña,), sacrifice to the seasons that share the sacrifice Atharvaveda 18-1-18

The son of *Aditi-The Aditi* represent infinite nature, and the sun came in to the existence from nature-*Aditi*, it has been indicated by

the son of *Aditi.*

The bull yields the bull- The sun came in to the existence from the fundamental energy, the bull is a metaphor for the fundamental energy, from him the sun, came into the existence, just like bull. It has been indicated. *He-the sun sharing the sacrifice to the seasons that share the sacrifice*, it has been indicated that sun is responsible for changes in the temperature pressure gradient and seasons, which is responsible for creation sacrifice-*Sṛṣṭi, Yajña,*

The seal shows the evolution of the creation under the temperature pressure gradient of six seasons and cosmic principles, where the components of the creation evolved from the fundamental energy and merge into the same.

Figure 14 Bio-Geo-Chemical Cycle

 a.  Genomic chromosome

b.  chromosome pair

c.  c.  wheel

Figure 14

The Rhino with two horns indicate the two helix of DNA,

from fundamental energy under temperature pressure gradient of six seasons.

The life has evolved from a single cell with cell division, the the evolution of genomic chromosome, and gamets is the cause of biodiversity in the nature, the components of the nature have evolved from the fundamental energy and merge into the same with end of life.

The Rhino represent the fundamental energy, and two horns represent two helix of DNA, which synthesize genomic chromosome and gamets in the cell, with cell division. The feeding tough in the front indicates inhalation by the same fundamental energy in a cyclic manner.

The wheel with six spokes- It has been expressed that under the cycle of the wheel of the six seasons with temperature pressure gradient the creation came in to the existence *Ṛg.*1-164-12b

Two hemispherical bodies intermingled - The life has evolved from single cell with cell division.

The two thick lines- it indicates the formation of the chromosome pairs with different strains, accordingly the genomic chromosome regulate the life. Cycle.

The wheel with six spokes- The wheel indicates that the creation

is working in a cyclic manner under biogeochemical cycles under the six seasons.

Seasons

These others say that he, God with farseeing eyes, is mounted on the lower seven wheeled, six -spoked car Ṛg. 1-164-12

c. Cosmic Principles

The creation is working as a system under the cosmic principles. These principles have been given symbolically in the *Puruṣa sūkta* Ṛg.

Seven fencing -sticks had he, thrice seven layers have been prepared, When the Gods, offering sacrifice, bound, as their victim, *Puruṣa Ṛg*. 10-90-15.

It has been expressed that the process of creation has been started with formation of the atom. Where due to the spinning of the electrons around the nucleus electro-magnetic energy generates, in this way the fundamental energy (*Puruṣa*) has bound in side the atoms, it binds the atoms and accordingly the creation came in to the existence. For the functions of the creation seven sticks (seven planets), twenty-one fuel are in operation, these twenty-one fuel represents twelve months, six seasons and the three weather (Hot, cold and the rainy season). Through them the creation is working as a system, it has three centres -sky, atmosphere and the earth as indicated by the three layers. In this way a picture of the creation

system has been expressed symbolically.

Gods sacrificing sacrificed the victim: these were the earliest ordinances. The mighty ones attained height of heaven, there where the Sādhyas, Gods of old, are dwelling Ṛg. 10-90-16

The *Yajña*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions get generated, where according to the cosmic law- *Dharma, Deva* - fundamental particles are the first, with their activity they get reached to the height of matter and the fundamental particles- *Deva.* It means the fundamental particles are the first in the series of actions and interactions. Through their activity they are converted into the matter and again reach to their original old state of *Deva* - fundamental particle through reversible reaction. It is an indication towards the natural cycles, through which the natural components have been synthesized and disintegrate in the reversible direction.

The aim of the seal is to demonstrate Bio-geo -chemical cycles in the nature.

XXXX

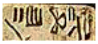
18. Models of micro bodies for the nucleic Acid studies

A collection of the seals have been recovered at one place along the main street of mound E at Harappa. It is a fair evidence of a gene bank and biotechnological industrial trademark. Plate- 29, 30, 31 from ASI reflect the structural models of micro bodies used in Biotechnology Nucleic Acid studies.



Figurr 1

Plate- 7, ASI-A collection of inscribed objects found along the main street leading to the southern gateway of Mound E at Harappa.The pictographs engraved reflect biotechnological tools and technique at micro level. These micro pictographs can easily be compared with modern models of micro bodies used in Biotechnology.

1   The pictograph of Bovine represents the holy oil's mysterious title- fundamental energy. Above the animal symbolically the separation of the genetic material has been

depicted.

A  DNA replication, b  symbolic separation of the nucleic Acid, c  crossing over, d  DNA replication, e  chromosomal inversion, f  genomic chromosome.

2  **a**  **the arrow shows reaction in forward direction b**  **cell division c**  **DNA the building block -** DNA replication with formation of m RNA, d  from the replicating DNA, the coiling of the DNA genomic chromosome synthesized, it has been depicted in series, e  on the lower side DNA duplication with chromosome inversion has been depicted.

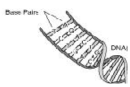
3  chromosomal inversion and gametes

4  chromosome compaction

5  **Complimentary base pairs**, a  DNA replication

b  chromosome synthesis c  the DNA duplication with formation of the complimentary base pairs, d   complimentary base pairs; they form the nucleotide pairs on the DNA,

6  **a Light of Life** – the nucleotide pairs on the DNA showing the position of hydrogen Triple and double bond.



7  **Genetic recombination,** a  genomic chromosome b  crossing over of the chromosome c  cDNA is inserted in this stage d  modification of the chromosome with addition of new gene and genomic chromosome 

8  **Phage DNA - an**  mRNA b  insertion of the gene in replicating DNA c   phage DNA, c  the

crystallographic image of the DNA d  the DNA with insertion of the gene immediately under go replication. 

9.  **Nuclear reaction** - the nucleic Acid reaction at molecular has been depicted with insertion of phage DNA. How rapidly it undergoes replication it has been shown on the tiny seal.

Astbury's image from x ray studies of the Nucleic Acids and at atomic level the atomic resolution image, during the replication has been shown. A 

B  DNA crystallography image on seal c  Asbury's image from x ray studies  the same figure enlarged.

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty Rig-Veda 1-CXVIII-1

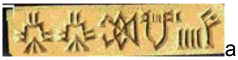
Figure 2 A collection of mini seals

Nucleic Acid micro-bodies



Figure 2

The collection of tiny seals exhibit the hypothetical models of micro bodies used in the gene technology.

1  a The tablet on top reflects the two DNA of different strain with double bond and triple bond,

b crossing over in between two different strains of the chromosome,

c the genomic chromosome with gametes

d DNA replication in four fold manner,

e triplet code. The importance of the triplet code in the cell division has been indicated by three projected nucleotide symbolically.

2  a development of embryo in the womb has been depicted,

b gametes

c gene interaction,

d genomic chromosome.

The gamete and gene interaction produces the genomic chromosome. It has been expressed with synthesis of genomic chromosome in the end.

3  **the nucleic Acid micro bodies**

A Tryptophan gene has been depicted, which is used as a tool in biotechnology,

B  phage DNA, c  model of DNA interaction during the formation of the recombinant DNA

d  The model of DNA with ribosome has been depicted in the end. It shows ribosome translate DNA code into life.

4  components of the nucleic Acid, a  the single

stranded DNA, b  the genomic chromosome,

C  Triplet code on the duplicating DNA, d  the fork model of DNA **replication**, e cell division  cell division, f  development in the womb

5  **Protein body,** a  the genomic chromosome, b  cell division d  formation of the gametes, e  the protein body

6  **Satellite DNA**

A  the development of the infant in the womb,

B  genomic chromosome,

C  satellite DNA,

D  human figure - symbolic organism

E  chromosomal aberration and inversion

F  the animal motif symbolizes the modified developed animal.

Figure 3. A collection of tiny seals for the <u>Biotechnological Industry</u>



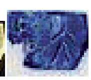
Figure 3 A collections of tiny seals for the <u>Biotechnological Industry</u>

Plate 30- A collection of seals and tablets from a single house along the main street leading to the southern gateway of Mound E at Harappa. The associations of these different types of objects together at one house show that some people possibly merchants were using wide variety of inscribed objects.

1  **the life supporting system**

1 A The seal on the top a bovine animal with incense burner has been depicted symbolically to indicate the origin of the creation, above the animal importance of the three – ozone o_3, Helium H_3, and water H_2o has been expressed with Trident -the triple bond of hydrogen.

2  **the cord of Life - chromosome** 1  DNA replication, 2  insertion of gene in duplicating DNA

3  The chromosome thread increase in length with DNA replication, it has been depicted on the seal. Association of gene with protein has been depicted

4  **the Genomic chromosome** - pair and a chromosome

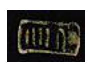
5  **1**   **the X ray crystallography model of the DNA** 

1 

2  gamete 3  genomic chromosome 4  triplet code

1 broken piece showing crystallography image of the DNA, 2 gametes, 3 genomic chromosome, 4 triplet code

6  **the nucleic Acid components - 1 the single stranded DNA**, 2 genomic chromosome, 3 Phage DNA, 4 Forked DNA, e meiotic cell division, 5 development of the infant in the womb.

.**The genomic chromosome with different genes -** 7  8  9  10  11 

The different genes have been expressed on the different tablets.

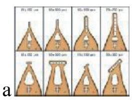
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19. Biotechnology tools and technique

The Nucleic Acid study in the cell requires specific techniques and instruments. With the discovery of electron microscope and X ray diffraction crystallography, the secret of DNA has been explored. The seals show the similar stages of experience in revealing the atomic structure of matter and DNA. Without this the metaphoric structure of the atom & DNA 'four horn buffalo emitted' will remain a slogan without the knowledge of electron microscopy and X ray diffraction crystallography.

The images on the tiny seals are hard to understand, but the skill with which these seals are prepared, it must have some extra importance. Accordingly with deep studies the seals have revealed the images, they are very much near to the modern electron microscopic and x ray crystallography images. We have only the images, their exact chemical name or name of protein can not be traced due the difference in terminology. We can compare the images on the computer with reference to the context of the figures on the seal, The figure of loop pliers and the robot has been depicted on the seal, besides two images are related with protein synthesis, three images with implantation technique, and two images are related with the crystallography.

Figure 1 Micro Loops

a  b   c



Each box contains 20 MicroLoops E™ attached to stainless steel rods.

Choose between Vertical, Horizontal and Inclined aperture MicroLoops E™.

MicroLoops used in modern technique

MicroLoops E™ are precision attached to beveled, solid, nonmagnetic stainless steel rods with standard lengths of 11, 19 and 25 mm and SPINE length. They can be cut to other lengths using spring steel compatible cutters . Rods can be easily bent using needle nose pliers to place the crystal in a desired orientation. The same has been expressed symbolically

Figure 1Robot

The Scripps Institute’s Williams was sometimes able to work by remote control from La Jolla using the advanced automation at the SIBYLS end station, whose robots and software can load samples, track ongoing experiments in real time, and collect data. The similar use of robot may be observed on the seal

Figure 14 2 Showing a Robot in between two tree

Figure 2  b. Robot  

-  S  separation of gentic material
- **Figure 3 separation of genetic material**

Figure 3 The symbolic placement of the crystal in desired direction

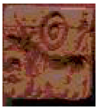
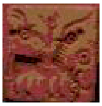
Figure 4 a.  b.  c.  The successive steps have depicted with single crystal and the needle nose pliers in the hand of a symbolic man, the triplet has been depicted symbolically with three head of the animal symbolically. In succession the crystal modify the DNA, it has been indicated by the growth of the horns and a plant like structure in between two symbolic head of the animal.

Figure 5 X. Crystallography image

Obtaining a clear diffraction pattern of an object required that the crystal be pure and the x-ray strong enough. However, as Franklin realized, DNA existed in two forms in equilibrium which resulted in a very unclear diffraction pattern. These forms were the A form, which is the dehydrated form of DNA, and the B form, which generated a long and fibrous structure due to humid conditions.

Franklin, applying her chemistry background, then proceeded to isolate these two forms using clever laboratory techniques such as Ṣmanipulation of the critical hydration of her specimens¿ [2]. The A and B forms were then separated and subjected to X-ray crystallography obtaining the pictures which would be the basis of Watson and Crick’s helical DNA structure; one of them the famous photo no. 51 of the B DNA Figure10



Figure 5 a. crystallography image modern b. on the seal

.Figure 6 Astbury’s image from X Ray studies of Nucleic Acids

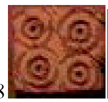
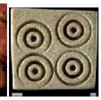
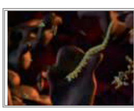
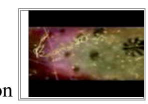
I.a  II.  8  

Figure 5 I, II . Astbury's images, from "X-Ray Studies of Nucleic Acids," 1947

The same studies have been depicted on the steatite button seal

Figure 7 Protein translation DNA Transcription and Protein Assembly

 Protein Translation 

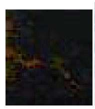
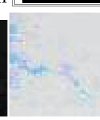
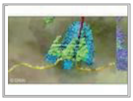
c. the same on the seal  

Figure 6 a Protein translation b. same c. observed on the seal

Figure 7 DNA copying and protein synthesis\

a.  a. DNA Copies Itself 

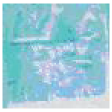
 b. The structure on the se al 

Figure 7. a. Protein synthesis modern model b. observed on the seal

Figure 1 Groups of tiny seals, sealing & button seals – Nucleic Acid study fine images



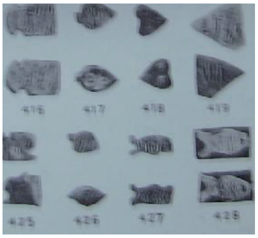


Figure 2 Nucleic Acid study fine images

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty Rig-Veda 1-CXVIII-1

It has been expressed that the speed of DNA replication with triplet genetic code is swifter than the human mind in multiple direction, it is flying like falcons

 ***The DNA is flying like falcons***

 ***Figure 2 Protein synthesis speed The DNA replication in multiple direction with protein***

synthesis.Figure 3 structure of protein



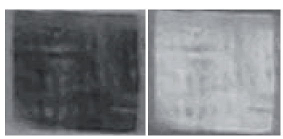
b



Figure 3 Structure of protein

Newly Explored Bacteria Reveal Some Huge RNA Surprises (Dec. 7, 2009) ț Researchers have found very large RNA structures within previously unstudied bacteria that appear crucial to basic biological functions such as helping viruses to infect cells.

Figure 4 the chain of amino acids on seal



b



The green fluorescent protein GFP consist of 238 amino acids, linked together in a long chain. This chain folds up into the shape of a beer can. Inside the beer can structure the amino acids 65,66, 67 form the chemical group that absorbs UV and blue light, and fluoresces green.

Credit image by courtesy of Noble foundation. Nobel prize in chemistry in chemistry 2008

The chain of amino acids image can be observed on the seal

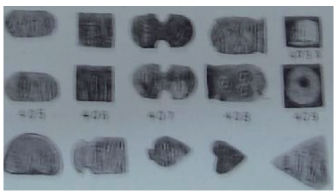


Figure 3 x ray crystallography images

Three groups of seals Nucleic Acid study fine images

Figure 12 Crystallography image of DNA

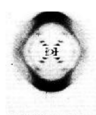




Figure 12 Crystallography image of DNA 16 b the figure on the seal

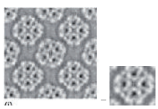
The seal symbol shows the crystallography image of the DNA,

along with the infection of tryptophan gene to obtain phage genome

X-ray crystallography was the means to discover the molecular structure of DNA 1952, Rosalind Franklin, produces an x-ray photograph of DNA that proves it has a double helical structure.

Figure 13 Crystallography of Protein

A modern model   b figure on the seal





A   b   figure on the seal

Figure 13 The two dimensional Electron crystallography, the typical tetrameric structure of aquaglyceroporin is up to a comparable level on the seal.

Figure 14 2 D crystal image of DNA

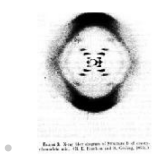




Figure 56 a 2 D crystal image of DNA figure 18 b on the seal

Two 2D crystal image of DNA has been given by R. Franklin & Gosling 1954

Figure 15 DNA Repair Protein at Work

It has been shown that two Mre11 proteins worked together as a dimer, forming a U-shaped structure for the DNA repair called homologous recombination. For repairing the protein bind with DNA.

a.  b. 

Figure15 a U shape of the Mre11 dimer, F. 19 b the symbol on the seal with recombinant DNA, it indicate the importance of the recombinant DNA, the black lining at the border is protein.

Figure 16 A group of Seals - Nucleic Acid study atomic resolution images

Atomic resolution images

The X ray crystallography has helped in the study of atomic structure of atom. The tetrahedral arrangement of the hydrogen bonds has given important clues for the study of nucleic acid. The

similar experience of studies and atomic resolution images can be observed on the tiny seals.

Figure 16 **A group of seals – Nucleic Acid study Atomic resolution images**

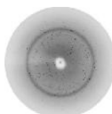
a.  b.  c. 
d. 
Figure on the seal

Figure 17 & b Crystalline solid atomic image of Strontium titanate. The brighter atoms are Sr and darker are Ti

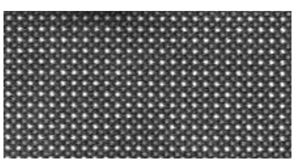
A  b 

Figure 17 Crystalline solid atomic image of Strontium titanate. The brighter atoms are Sr and darker are Ti

Figure 18 Drawing of water square molecule

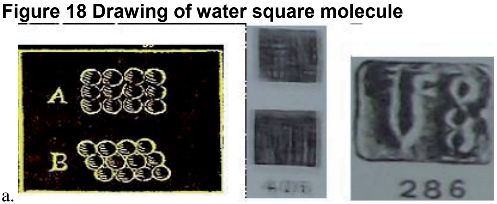
a. 

Figure 18 Drawing of water square molecule

work *Strena seu de Nive Sexangula* (1611) that the hexagonal symmetry of snowflake crystals **was due to a regular packing of spherical water particles.**

Figure 19 tetrahedral arrangement of hydrogen bond

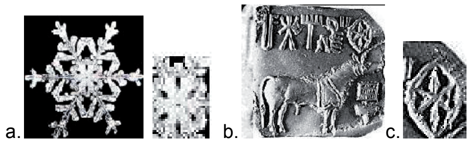


Figure 19 tetrahedral arrangement of hydrogen bond

Drawing of square (Figure A, above) and hexagonal (Figure B, below) packing from Kepler's work, *Strena seu de Nive Sexangula*.
As shown by X-ray crystallography, the hexagonal symmetry of snowflakes results from the tetrahedral arrangement of hydrogen bonds about each water molecule. The water molecules are arranged similarly to the silicon atoms in the tridymite polymorph of SiO_2. The resulting crystal structure has hexagonal symmetry when viewed along a principal axis.

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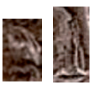
20. Biotechnological research Industry tools

The group of Seals

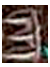
Biotechnological research Industry

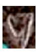
Figure 1 The genetic code

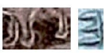


 **Ribosome translate the gentic code into life with protein synthesis**

 **Synthesis of chromosome**

 **Triplet genetic code**

 **Gamets**

 **Triplet genetic code**

 **synthesis of chromosome from DNA**

It has been expressed that the living- beings have evolved from the single DNA. The DNA replication is going on in multiple

directions in the cell.

The ribosome translates the genetic code into life with protein synthesis. The genetic code with synthesis of chromosome leads to evolution with formation of the gamets.

Figure 2 DNA replication and protein synthesis

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty Rig-Veda 1-CXVIII-1

It has been expressed that the speed of DNA replication with triplet genetic code is swifter than the human mind in multiple direction, it is flying like falcons



The DNA is flying like falcons



Figure 2 Protein synthesis speed

Figure 2 a and b

The DNA replication in multiple directions with protein

synthesis

The group of miniature seals

Biotechnological research Industry



Figure 5

Scanning Electron Microscope analysis of the incising marks on the steatite tablets indicates the use of three different specialized

bronze graving tools. Each tablet was first shaped from raw unfired steatite and then incised with the script. After incising, it was fired in a high temperature kiln that would have taken two or more days to reach the temperature of 1000 degrees Centigrade that is necessary to harden the steatite. On this group of tablets, the edge of the incision is very sharp and has no distinctive grooves. The sixteen three sided tablets with incised inscription on each face were found in the debris.

Figure 4 a b the three groups of Seals - gene Bank and Industry

The figures on the seas show the function of the nucleic Acid at molecular level with insertion of the gene. The stages during the incorporation of gene and the role of the ribosome have been expressed. The tiny seals are the symbols of biotechnological industry.

The collection may be for the Agriculture. It has been indicated on the seal with Animal motif 4 b

4b sample kit



It has been expressed that life has evplved from single DNA, the ribosome translate the DNA code into life with protein synthesis and gamets, accordingly the different communities and territories have evolved with genetic recombination. The DNA sequence can be changed with gene transfer with using micro loops.

Figure 6 .  ,

Protein body

During the DNA replication the micro loops are used for the transfer of gene, for this the role of protein is important. It has been expressed by protein body with cell.

Figure 5 a

A sample kit of gene 

b , the figure represent communities and territories,

c the sample kit for gene 

 DNA with ribosome , the ribosome translate DNA code into life with protein synthesis

A  Micro loops

II  the sample kits of gene

Figure group of tablets



The seals belong to a Biotechnological Industry, where gene transfer with using micro loops used in biotechnological research.

The stages of nuclear reaction during the transfer of gene by robotic micro technique and micro loops have been expressed ultra fine structures on the seals. Where ribosomes are attached on the site of protein synthesis and information is transferred from ribosome to ribosome in series.

The picture of microloops on the seal with gene kit shows that for the transfer of gene robotic technique has been used and the results are on the mini seals, these seals have prepared with great skill and labout, without computer this is not possible to engrave computer images on the seal.
The seal showing the role of ribosome in protein synthesid at micro level is fair evidence of their advance technology.

Figure b. Robot

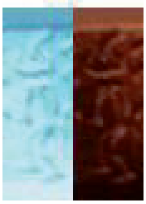
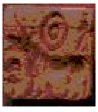
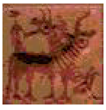
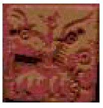


Figure The symbolic placement of the crystal in desired direction

Figure a.  b.  c.  The successive steps have depicted with single crystal and the needlenose plier in the hand of a man, the triplet has been depicted symbolically with three head of the animal symbolically. In succession the crystal modify the DNA, it has been indicated by the growth of the horns and a plant like structure in between two symbolic head of the animal.

The result of gene transfer have been depicted on the three sided mini

seals.

abc Nucleic Acid reaction

A  b  c 

The seals show the nuclear reaction at molecular level during the transfer of gene.

Resulta have been shown the sixteen mini seals.

XXXX

21. A group of tiny seals - Infinite to finite

All about the creation and life on the seal

 Figure 17

1 I  II  III  IV 

V  VI 

The group of tiny seals expresses the evolution of the creation from the pre-cosmic condition to the evolution of man symbolically in chronological order.

The hollow space on the button seal shows the pre cosmic condition, above it transverse divergent lines express the **formation of the charged particles with movement.**

The group of tiny seals excavated at one place explores the stages

in the evolution of the creation, and genetic evolution of the human species on the earth.

One I  II  III  IV 

V  VI 

The button seal expresses the evolution of the creation from the pre-cosmic condition to the cosmic condition.

I 1  **the button seal - the figure express the evolution of the creation from pre-cosmic to cosmic condition in the early primitive universe.**

The button seal symbol, the button seal indicate origin of the biotic and a-biotic components of the nature from the atmospheric ocean in two different directions. The hollow structure in the centre is symbolic atmospheric ocean and the bifurcation of the hollow structure into two different directions indicates the evolution of the biotic and a-biotic components in two different directions.

Atharvaveda 13-1-52

2  **The hollow space** - it is the qualm and quiet pre-cosmic condition of the fundamental energy, when there was nothing in

existence only deep darkness was there. There was only one force, which began to disintegrate from infinite to finite with its back ground in the infinite cosmos Rig-Veda 10-129 1, 2, 3.

Rig-Veda 10-129- 2

3.  **The existent's kinship ş the single unified**

It has been expressed that every thing, which has existence is connected with the single unified force.

It has been expressed that the movement of the charged particles with free action and mighty forces had extended transversely.

Sages who searched with their heart's thought discovered <u>the existent's kinship in the non-existent.</u>

Rig-Veda 10-129-4

<u>Transversely</u> was their severing line extended: what was above it then? And what below it

There were begetters: there were mighty forces, free action here and energy up yonder. 10-129-5

4.  **The animal motif represents the imaginary fundamental energy in the cosmos.**

5.  **The incense burner**

The incense burner below the neck is symbol of light and energy,

which indicate sun as the source of energy and light on the earth.

Sun is the soul and eye of the creation Rig-Veda 1-115-1

6.  **Pre-cosmic - Nebula -** the hollow structure in the middle symbolize the pre-cosmic condition with origin of *Hiranyagarbha-* the golden embryo- Nebula *Rig-Veda 10-121-1*

Then was not anyṭexistent nor existent: there was no realm of air, no sky beyond. What covered in and where? And what gave shelter? Was water there, unfathomed depth of water? Rig-Veda 10-129-1

Darkness there was: at first concealed in darkness this all was in discriminated chaos.

All that existed then was void and form- less: by the great power of Warmth was born that Unit Rig-Veda 10-129-3

7.  **The *gāyatrī*-** the triangle it symbolize the generation of three charged particles in the early primitive condition of Cosmos.

The Gāyatrī, hath, they say, three bands for kindling: hence it excels in majesty and vigour Rig-Veda 1-164- 25.

8.  **The golden embryo**- the dot at the base of the triangle symbolize the generation of *Hirṇayagarbha* - golden egg 121, it signifies the generation of energy in the Atom.

In the beginning rose Hiraṇyagarbha, born only Lord of all created beings.

He fixed and holdeth on this earth and heaven What God shall we adore with our oblation? Rig-Veda 10-121-1

The Hiraṇyagarbha - golden egg signifies the generation of energy in the womb of Nebula and in the womb of Atom.

Figure II ş  **four horned buffalo emitted**

II 1  **four feet and four frame - biotic and a-biotic components** - the symbol with four dots on the four corners and the cross The four dots on four corner is the symbol for the generation of four components of the atom (electron, proton, neutron and the generation of the energy in the atom), which constitute the base of the creation, the four lines in the square is the symbol for the four bases (Adenine, Guanine, Thymine, and Cytosine), which constitute the base of the DNA and the living-beings. Rig-Veda 4-58-2, 3

Bhaga fashioned the four feet; Bhaga fashioned the four frame pieces (? Usyala; Tvaṣṭā adorned (pic) the straps (? vardhna) along in the middle; let her be to us of excellent omen Atharvaveda 14-1-60

Symbolically the four feet and four frames express the four components of atom, and the four frames express the four bases of the DNA. They constitute the base of the living and non-living objects. The *Tvaṣṭā* is the shaper of the forms with triple bond in the centre of the two strips of the DNA Atharvaveda 14-1-53

The well developed cell in the nature has been expressed as well flowered, all-formed bridal- car metaphorically. It has been prayed to sun to make a bridal-car pleasant to husbands. Metaphorically the husband is the term for the organic carbon, the chemical energy has been expressed as wife, and the cell is bridal-car.

Rig-Veda 1-161-7

The synthesis of the genetic material has been expressed as a horse, and the development of the photosynthetic system in the primitive condition has been expressed as horse out of horse. Accordingly the cell became well equipped on the journey in the nature.

Figure II 2  **the ribosome translate the DNA code** - the ribosome translate the DNA code into life, and regulate the life of the living-beings by DNA replication.

Tvasta the lord hath made all forms and all the cattle of the field:

Cause them to multiply for us. Rg.1-188-9

Rig-Veda 2-23-17.

Tvasta the lord hath made all forms and all the cattle of the field

cause them to multiply for us. Rig-Veda 1-188-9

Indra hath yoked his bays, the AŚvin's car is horsed; Bṛhaspati hath brought the cow of every hue. Ye went as Ṛbhu, Vibhvan, and Vāja to the Gods. Rig-Veda 1-161-6

The AŚvin - nucleotide pairs of the DNA have been joined with each other by the hydrogen bonds. It has been expressed by the Indra has yoked his car and the *AŚvin's car is horsed,*

Bṛhaspati hath brought the cow of every hue- the nucleus regulate the metabolic reactions in the cell, accordingly each and every component of the cell has been synthesized, they brought forward the different stages of the cell in nature as *Ṛbhu*-cell, *Vibhvan*-eminent*, and Vāja*-young cell.

Figure II **3**  **two mothered son -** the nucleotide pairs on DNA **-** the symbol is ladder like model of DNA with nucleotide pairs.

The aids wherewith the Wanderer, through his offspring's might or the two mothered Son shows swiftest mid the swift Rig-Veda 1-112-4

Two mothered son is metaphoric expression for the nucleotide pair of the DNA. Are two mothers in between them the nucleotide pair?

Figure III ṣ  *Soma pressed Soma*

Hither is come the Ṛbhu's gift of riches; here was the drinking of the well ṣ Soma pressed Soma. Since by dexterity and skill as craftsman ye made the single chalice to be fourfold

It signifies the inherent self generated source of DNA replication in four fold manner.

 Role of messenger mRNA

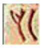
III1  DNA replication and transcription of the code the duplicating DNA with transcription, and the single strand of mRNA on one side

III 2  Duplicating DNA

III 3  **mRNA**

III 4  **Saranyu deserted twins-** The DNA replication and pairing of chromosome. *Saraṇyu deserted twins*- Pairs *Atharvaveda 18-2-33*

.

III 5  **chromosomal inversion** - the chromosomal inversion and loop on one side of the chromosome with formation of new chromosome

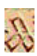
DNA transcribes the message into the mRNA, and single strand of

DNA on one side.  The mRNA has the message for the DNA replication.

The replicating DNA synthesize chromosome, the chromosome undergo inversion., which leads to evolution in nature.

Figure IV- **gene inter action** 

IV 1  **the genomic chromosome**

IV 2  **DNA replication**

The symbol is for the DNA replication, through which they synthesize the gametes during the sexual reproduction.

IV 3  **Four ladles-** the cell division, first division and second division,

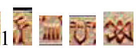
6. The sacrifice ladle, wrought newly by the God Tvaṣṭā's hand (DNA) Four ladles have ye made thereof.

The sacrificial ladles (developing cell) was made new by *Tvaṣṭā* - genetic material, it means first genetic material has synthesized in side the cell, it has given the capacity for cell division during the primitive anaerobic conditions and in turn the cell has been divided

in to four.

IV 4  **gene interaction**

The symbols show the stages in the evolution of the living-beings. The development of the physical body is due to the mitotic and meiotic cell division. The gene interaction decides the trend of evolution. (Mendel's laws of inheritance)

Figure V  1 

With Trikadrukas it purifies it self - the two forms of DNA and the role of the triple bond & double bond in the evolution of human-beings

With Trikadrukas, it purifies it self six wide ones verily great one; tristubh, gāyatrī,, the meters: all those (are) set in Yama Atharvaveda 18-2-6.

V 1  **Trikadrukas**  *(=, ≡)* - the two double bond and a triple bond of hydrogen, they regulate the DNA replication.

V 2  **the triplet code** - the symbol is for the triplet code on the messenger RNA, which carry the message for the Protein translation.

Flying with falcons, may your chariot, Aśvins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind,

three seated, O ye mighty Rig-Veda 1-CXVIII-1

Rigveda1-95-1

V 3  **the single chalice to be fourfold** - it expresses that the with DNA replication the cell divide in four fold manner.

Hither is come the Ṛbhu's gift of riches; here was the drinking of the well ṣ Soma pressed Soma. Since by dexterity and skill as craftsman ye made the single chalice to be fourfold

V 4  **the genomic chromosome with gametes**

V 5  **crossing over in the cell**

The chromosomal crossing over in the cell is important for the evolution in the nature, with generation of the two different types of the DNA in the cell body.

V 6  **the two forms of DNA** - two types of the DNA for the synthesis of XX & XY chromosome. The triple bond has been depicted on the arms and the triple bond has been depicted in the middle.

With Trikadrukas, it purifies it self six wide ones verily great one; tristubh, gāyatri, the meters: all those (are) set in Yama Atharvaveda 18-2-6.

The activity of the DNA has been indicated through *Trikadruka (=, ≡),* who represents a triple bond and a double bond of hydrogen, through which the complimentary base pairs are joined with each

other. 'The six wide ones' represents the three base pairs.

The chromosomal crossing over leads to evolution of the different gametes, and the synthesis of the Genomic chromosome. Accordingly, the human-species has evolved on the earth.

VI  **The omni form (*Visvarupa*)** - the evolution of human species from XX and XY

The bull, the youngling with the hump, hath frolicked, the strong and never-ceasing Calf hath bellowed.

Bringing our offerings to the God's assembly, he moves as Chief in his own dwelling-places Rig-Veda 10-8-2

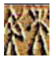
Rig-Veda 1-188-9

The DNA has been termed as *Tvaṣṭā*; he is shaper of all creatures with multiplication. It has been termed as omniform (*Visvarupa*); it means the DNA is universally present in all the living beings.

Rig-Veda 2-23-17.

VI 1  **the genomic chromosome -** the genomic chromosome has all the information for the life.

VI 2  **the gametes - the** formation of the gametes has given the ways for evolution with genetic recombination.

VI 3  **XX & XY chromosome** - the human figures expresses the evolution of male and female from the XX and XY chromosomes and the gametes.

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22. Indus Valley - Transgenic animals

Copper tablets 1 to 123 Transgenic Animals

The gene technology is new for the modern world but Indus Valley Vedic culture people were fully acquainted with this knowledge, the transgenic animals and plant species have been developed with an object to improve them for domestic purpose and for molecular farming for commercial pharmaceutical purpose, known as transgenic crops. The rich biodiversity in Indian subcontinent is its fair proof.

The pictographic structures are synonym to our modern microscopic structures of cytology and gene-technology.

1. The pictograph shows the sequence of the genetic manipulation and development of the domestic animal. The precipitation and separation of the genetic material with chromatography and their identification by the autoradiography has

been depicted on the seal through symbolic figures.

2. The animal figures depicted on the tablet are of the same animal in different shapes, they reveal their phenotypic and genotypic characters.

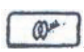
The tablet number from 1 and 2 reflect symbolic separation of the genetic material . The tablet 2 reflect the development of **Cow** like animal , the tablet number 3 reflect the insertion of foreign gene in the embryonic stage . The insertion of modified phage bacteria in the ovary has been depicted on tablet no. 6 and 7. The interaction of gene has been shown from 4 to 7 on reverse. The incomplete figure shows the impact of lethal gene.

Figure 1 the inscribed Copper Tablets from Mohenjo-Daro 1 to 16

Figure 2 the inscribed copper tablets from 17 to 31

Figure 3 the inscribed copper tablets from 32 to 45

Figure 4 the inscribed copper tablets from 46 to 60

Figure 5 the inscribed copper tablets from 61 to 75

Figure 6 the inscribed copper tablets from 76 to 91

Figure 7 the inscribed copper tablets from 92 to 107

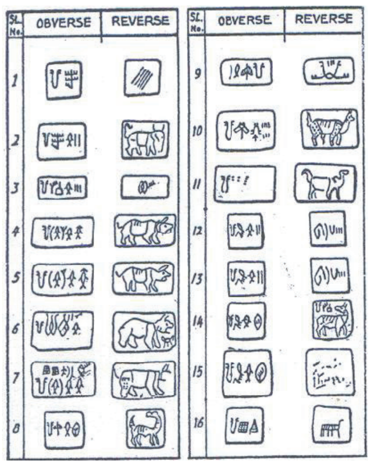
Figure 8 the inscribed copper tablets from 108 to 123

All the tablets have a common U shaped symbol, either in the beginning of the inscription or in the end of the inscription.

It shows that the cell division start from the chromosome and it ends with synthesis of the chromosome.

The DNA De oxy ribose Nucleic Acid is universally present in the living -beings. The DNA synthesizes the chromosome, which have all information for the development of the animal. The DNA can be modified with gene technology. Each inscription on the tablet is complete in it self, which shows the development of the animal from the genomic chromosome and the successive stage at which the modified gene can be incorporated. The phenotypic and genotypic characters have been expressed by the figures of the same animal on the reverse. The impact of lethal gene has been expressed by the incomplete development of the animal.

Figure 1 Inscribed Copper Tablets from Mohenjo-Daro 1 to 16



The development of the animal from the genomic chromosome has been expressed.

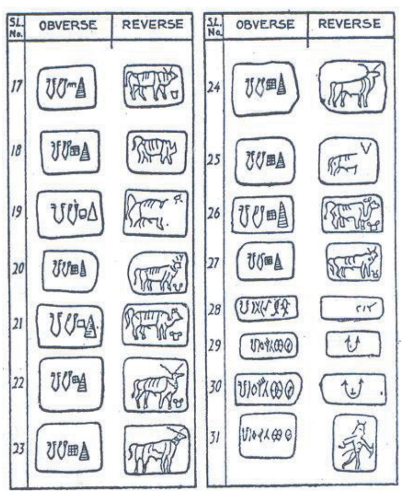
7. The development of the animal from the genomic chromosome with successive stages of the cell division and inoculation of a gene during the first division has been expressed. The development of the embryo has been depicted above the genomic chromosome. The implantation of the embryo in the womb has been expressed on the reverse.

12, 13 the development of the animal from the genomic chromosome and pairing of the chromosomes in telophase stage of the cell division has been expressed. The symbol next to the

genomic chromosome express that the ribosome translate the DNA code into life.

15. The development of the animal from the genomic chromosome in the womb has been expressed. The metaphase stage of the cell division has been expressed on the reverse.

Figure 2 the inscribed copper tablets from 17 to 31



The development of the animal from the embryo

17. The development of the animal from the two different chromosomes with formation of the gametes and the embryo has been expressed. The developed animal has been expressed on the reverse.

18. The development of the animal from the two different

chromosome with development of the globular and heart shaped embryo has been expressed. The incomplete development of the animal has been expressed on the reverse.

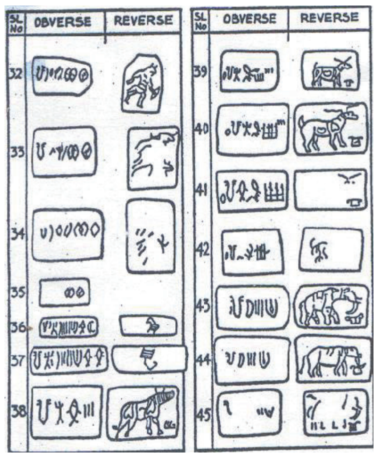
19. The unsuccessful development of the animal from embryo has been expressed on the reverse.

20 ṣ 27. The tablets from 20 to 27 demonstrate the result of the development of the animal in different conditions. The fully developed animal has been expressed on the reverse of the tablet number 26 and 27

28-30. the tablet number 28, 29, and 30 demonstrates the development of a genomic chromosome in the womb with successive stages of cell division. The incorporation of a foreign gene during the DNA replication has been expressed on the reverse.

31. The development of a semi human animal from the genomic chromosome in the womb has been expressed. The result has been expressed on the reverse.

Figure 3 the inscribed copper tablets from 32 to 45



The inoculation of the gene during the cell division

32, 33 the development of the animal in the womb from the genomic chromosome with inoculation of the foreign gene has been expressed. The development of the semi human species has been expressed on the reverse.

34. The inoculation of foreign gene in the genomic chromosome in the womb has been expressed. The pairing of the chromosome in the metaphase stage has been expressed on the reverse.

35, 36, 37 the modification of the genomic chromosome with inoculation of the foreign gene in successive stages of the cell

division in the womb has been expressed. The technique has been expressed on the reverse.

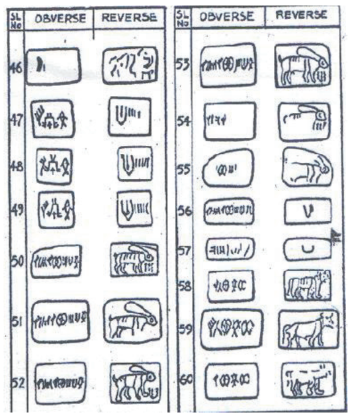
38, 39, 40 the development of the animal from the modified genomic chromosome has been expressed. The developed animal has been expressed on the reverse.

41, 42 the development of the animal from the modified genomic chromosome has been expressed. The separation of the chromosome and the pairing of the chromosome has been expressed on the reverse.

43, 44 the development of the genomic chromosome with inoculation of the tryptophan gene has been expressed. The developed animal has been expressed on the reverse.

45. The development of the bulbous chromosome and the gametes has been expressed. The pairing of the chromosome has been expressed on the reverse.

Figure 4 the inscribed copper tablets from 46 to 60



The inoculation of the gene during DNA replication

46. A pair of the chromosome has been expressed; the stage during the cell division has been expressed on the reverse.
47, 48, 49 the inoculation of the gene on the duplicating DNA during the cell division has been expressed. The development of the genomic chromosome has been expressed on the reverse.
50, 51, 52, 53, 54 the development of the genomic chromosome with inoculation of the DNA micro bodies during the cell division

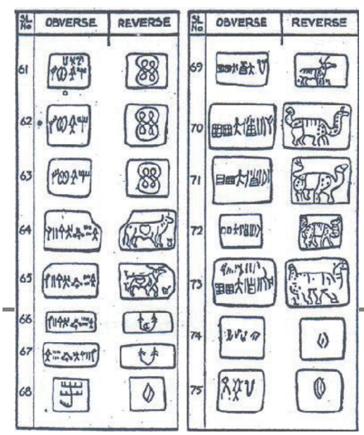
has been expressed. The developed genomic chromosome and the cell division have been expressed in the end. The resulting development of the animal has been expressed on the reverse.

55 the development of the gametes with cell division has been expressed.

56, 57 the steps in the inoculation of the DNA micro bodies during the first stage of the cell division have been expressed. The developed genomic chromosome has been expressed on the reverse.

58, 59, 60 the inoculation of the disease resistant monoclonal anti body during the cell division has been expressed. The separation of the protein body with second division has been expressed at the end. The resulting development of the animal has been expressed on the reverse.

Figure 5 the inscribed copper tablets from 61 to 75

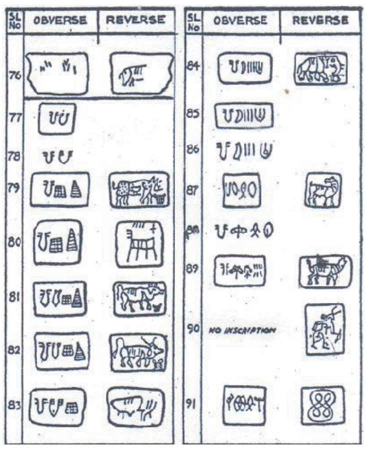


The inoculation of the RNA micro body during the cell division and the DNA replication

61, 62, 63 the inoculation of the RNA micro body during the cell division has been expressed. The modified gene after the cell division has been expressed at the end. The loop formation on the chromosome has been expressed on the reverse.
64, 65 the steps in the inoculation of the RNA micro body during the DNA replication have been expressed. The development of the animal has been expressed on the reverse.
66, 67 the steps in the inoculation of the RNA micro body during the DNA replication have been expressed. The developed genomic chromosome has been expressed on the reverse.
68. The separation of the gene has been expressed. The division of the embryo has been expressed on the reverse.
69 to 73 the development of the animal from the embryo has been expressed with inoculation of the desired gene at various stages of the development. The resulting development of the animal has been expressed on the reverse.
74 the development of the embryo from the DNA micro bodies has been expressed. The embryo in the womb has been expressed on the reverse.

75 the development of the genomic chromosome with crossing over and successive second cell division has been expressed. The development of the embryo has been expressed on the reverse.

Figure 6 the inscribed copper tablets from 76 to 91



The development of the embryo from two different chromosomes

76 the pairing of the chromosome during the metaphase stage of

the cell division has been expressed. The incomplete development of the animal has been expressed on the reverse.

77, 78 the homologous and the heterologous chromosome pairs have been expressed.

79, 80 the development of the embryo from the genomic chromosome has been expressed. The development of the animal from the implanted embryo in the womb and the chromosome bridge has been expressed on the reverse.

81, 82, 83 the development of the embryo from the two different genomic chromosomes has been expressed. The resulting development of the animal has been expressed on the reverse.

84 the development of the elephant with inoculation of the desired gene has been expressed.

85, 86 the development of the animal from the genomic chromosome has been expressed.

87 the development of the horse like animal from the genomic chromosome with inoculation of the desired gene on duplicating DNA has been expressed. The developed animal has been expressed on the reverse.

88 the development of the embryo from the genomic chromosome with inoculation of the satellite DNA has been expressed.

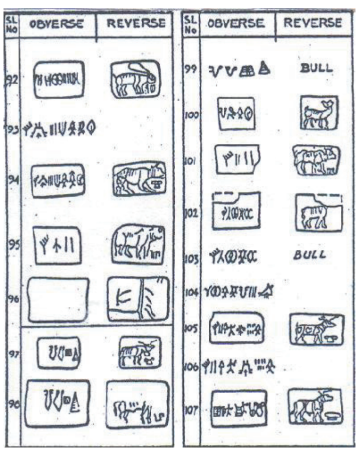
89 the development of the animal from the gametes with inoculation of the desired gene on the duplicating DNA has been expressed. The resulting development of the animal has been

expressed on the reverse.

90 the development of the semi human has been expressed on the reverse.

91 the development of the animal with inoculation of the RNA micro body during the cell division have been expressed. The loop formation on the chromosome has been expressed on the reverse.

Figure 7 the inscribed copper tablets from 92 to 107



The development of the animal with inoculation of the different genes

92 the development of the animal from the genomic chromosome with cell division has been expressed. The developed rabbit has expressed on the reverse.

93 the development of the embryo with inoculation of the RNA on the duplicating DNA and cell division has been expressed.

94 the development of the embryo with inoculation of the desired gene on duplicating DNA and cell division has been expressed. The implantation of the embryo in the womb has been expressed on the reverse.

95 the development of the gamete from the RNA and the satellite DNA has been expressed. The incomplete development of the animal has been expressed on the reverse.

96 the pairing of the chromosome has been expressed on the reverse.

97 the development of the embryo from the two different chromosomes has been expressed. The developed animal has been expressed on the reverse.

98 the incomplete development of the embryo from the two different chromosome has been expressed. The resulting incomplete development of the animal has been expressed on the reverse.

99 the development of the globular and heart shaped embryo from the two different genomic chromosome has been expressed.

100 the development of the embryo from the genomic chromosome with inoculation of desired gene and cell division has been expressed. The developed animal has been expressed on the reverse.

101 the development of the gametes from the RNA has been expressed. The resulting development of the animal has been expressed on the reverse.

102 the inoculation of the phage DNA with cell division has been expressed. The crossing over of the chromosome and separation of the protein body has been expressed in the end. The resulting development of the animal has been expressed on the reverse.

103 the inoculation of the monoclonal antibody with RNA during the cell division has been expressed. The successive second division of the cell and the separation of the protein body have been expressed at the end.

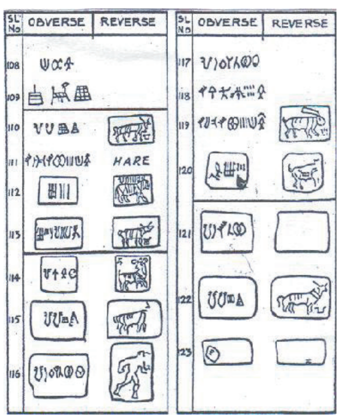
104 the inoculation of the DNA micro body during the cell division have been expressed. The separation of the genomic chromosome and gametes with successive cell division has been expressed at the end.

105, 106 the development of the cell body with inoculation of the RNA during DNA replication have been expressed. The resulting development of the animal with implantation in the womb has been expressed on the reverse.

107 the development of the genomic chromosome from the embryo

has been expressed. The resulting development of the animal from the genomic chromosome has been expressed on the reverse.

Figure 8 the inscribed copper tablets from 108 to 123



The successful development of the animal with disease resistance, and the incomplete development of the animal show impact of lethal gene.

108 the inoculation of the gene and separation of the protein body with cell division have been expressed.

109 the development of the embryo from the duplicating DNA and the bridged chromosome has been expressed. The resulting development of the animal has been expressed on the reverse.

110 the development of the heart shaped and the globular embryo from two chromosomes has been expressed.

111, 112 the development of the genomic chromosome with inoculation of the RNA in successive stages of the bridged chromosome and the cell division has been expressed. The development of the animal from the resulting genomic chromosome has been expressed on the reverse.

113 the development of the genomic chromosome with two successive stage has been expressed. The resulting development of the animal has been expressed on the reverse.

114 the development of the embryo from the genomic chromosome with inoculation of the satellite DNA during cell division has been expressed. The resulting development of the animal has been expressed on the reverse.

115 the development of the globular and incomplete heart shaped embryo has been expressed. The resulting incomplete development of the animal has been expressed on the reverse.

116 the development of the embryo from the genomic chromosome with inoculation of the gene and monoclonal anti body has been expressed. The developed disease resistant human species has been expressed on the reverse.

117 the development of the embryo from the genomic chromosome with inoculation of the different set of the genes in successive stage of the cell division has been expressed.

118 the development of the cell body with inoculation of the gene during the DNA replication have been expressed.

119 the development of the rabbit from the genomic chromosome with inoculation of the gene with cell division has been expressed. The developed animal has been expressed on the reverse.

120 the development of the gametes has been expressed. The incomplete development of the animal has been expressed on the reverse.

121 the development of the embryo from the genomic chromosome with inoculation of the gene and the monoclonal antibody has been expressed.

122 the development of the heart shaped and the globular embryo from the two different chromosome has been expressed. The resulting development of the animal has been expressed on the reverse.

123 the development of the embryo in the womb has been

expressed. The chromosome pair has been expressed on the reverse.

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23. Conclusion

The key to decipher the Indus valley seals is in the Vedic metaphors and Vedic Science. The Vedic metaphoric knowledge of creation and Biology has been engraved on the seals.

It is a known fact that India and Africa have a largest biodiversity zones in the world, it reflects their knowledge of biotechnology and development of new species.

Ṛgveda the oldest literary record human civilization on the earth has no description of the temple or iconic worship. The Indus Valley has no trace of the temple or idol worship and their religious beliefs. It suggests that Vedas in original are not religious scriptures.

The excavation of the fire altar at some places is an indication about their knowledge of sacrifice-*yajña*. It express that for every action, there is a reaction in equal and opposite direction. The

creation came into the existence with actions and interactions under the laws of thermodynamics.

By means of sacrifice the Gods accomplished their sacrifice: these were the earliest ordinances. These Mighty ones attained the height of heaven there where the Sādhyas Gods of old are dwelling.Ṛg.1-164-50

It is common sign of Indus-Vedic culture testimony.

A well developed, city organization, existence of dock yard and dam, it indicates their foreign connections for trade. Indus

Vedic culture was having trade contacts with summer, Egypt, Mesopotamia and Babylon.

In excavation at Indus Valley, the Archaeologists have discovered a large number of the crop varieties and the croplands with irrigation facilities and water supply through the canal system. A large number of water reservoir and wells with a big dam, they reveal the fact that the civilization was a scientifically developed society having no place for God and Soul, as we believe today. With the scientific developments they reach on the peak of the development and the ecological disaster, global warming and flooding with time was the main cause of the destruction of the Indus Valley- Vedic culture. The excess irrigation and deforestation may be the cause of ecological disaster and formation of the desert. They were having the knowledge of the global warming and its impact hence before the catastrophe they have evacuated the areas near by the sea shore and rescued them selves.

Due to this after flooding and release of the dam water the whole area was under the sea mud, which has its emergence afterwards on the earth with the geological disturbances with which we are in contact at present. Due to this in the highly populated areas the human skeletons have not been excavated in large quantities and those, who have not escape, they might have the victims of the sea currents. Accordingly the traces of laboratories, machines and equipments have could not be found.

They have reached on the peak of the development scientifically. They may have exploited the nature through cross breeding, hybridization and the development of the new species for the domestic purpose. Their achievement in these field and consequent development of Biotechnology has been reflected on the seals through the pictographs.

They have compiled their knowledge in the Vedic hymns after going far away from the affected regions. They have emphasised on the harmony with the nature and the natural components. The *Puruṣa sūkta* is latest with supreme knowledge of the creation in sixteen verses. The compilation of the Vedic hymns is after reaching at the peak of the development and after the ecological disaster, it can be confirmed from the *Asya vāmīya Sūkta*- The hymn of the supreme. The scientific knowledge compiled in the Vedic hymns reflects that the **Vedic Science is vis-à-vis modern science,** along with it; the Atharvaveda has a hymn on the global

warming. It is the testimony that they were acquainted with the global warming and its impact. Accordingly they have developed harmony with nature away from the urban areas in the villages.

The Indus Valley- Vedic culture was scientifically developed in the various fields along with gene Technology. We can trace the facts from the pictographic seals. A look on the seals with deep insight reveals the fact that the engraved small pictographs associated with the animal or human figure are complimentary with each other. They are the symbolic expressions for which the seals were prepared. The pictograph, which have been engraved on the seals are basically the same for all people. It is also a fact that such a development is not possible without the scientific and ecological knowledge and the principles working in the creation. The Vedic scientific principles synonym to our modern knowledge can justify the development and the compilation of the Vedic hymns was for the future generation to come on the earth.

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future age.Ṛg.10-72 1.

Caste system

The caste system is indigenous to India, which is based on the hereditary principles. The unity in diversity has flourished in the Indian subcontinent under the caste system. It is cultural integrity of India.

British Emperor of India has used monotheism and polytheism to divide the Indians on the name of Religion. They observed the cultural integrity to project diversity, they have imposed their concept of religion on India. Otherwise the *Dharma* is confined to duty of an individual in the society.

The Indus Valley Civilization- Lamberg, Karlovsky, who drawn attention to the astounding degree of cultural homogeneity in the vast area of the Indus Valley Civilization, juxtaposed with the lack of any evidence for a centralised political structure. Not only is there a uniformity of culture, but the physical lay out of the community is replicated irrespective of whether it is the 5-acre site of Allahdino or the 150 acre site of Mohenjo-daro. Lamberg-Karlovsky believes this ‘enigma’ can be adequately explained by supposing that only an exceptional social organization such as the caste system can account for this. He finds a variety of Archaeological evidence to support this. The residential units at Indus sites, for example, were much larger than other contemporaneous sites, suggesting a stronger sense of kin identities or groupings. He notes that competition in a class structured society results in a much wider variety of styles and methods of production, where in a caste system, much more uniformity is to be expected, as is evidenced by the artefacts unearthed in the Indus Valley sites. Caste organization would also explain the social stability of such a massive culture in the absence of a centralised

state or chieftainship. Finally, the concern with purity in a caste system is simply evidenced in the Archaeological record by the unparallel attention and concern given to the control of and access to water and sanitation; at Mohenjo-Daro, there is an average of one well for every three houses.

If we consider the hypothesis of Lamberg-Karlovsky than the Caste system is indigenous to India, which is based on the hereditary characters, its principles can be seen in Indus Valley gene technology.

The Aryan - Dravid

Before the discovery of Indus Valley, there was no such discrimination on the name of Aryan and Dravid. The Aryan-Dravid dichotomy was postulated for political gain by the British. The difference in the traditions is due to the fact that in the South India the traditions of black yajurveda is followed, and in the North White Yajurveda is followed. The North is near to the cold hills, hence the north Indians have wheatish skin colour, on the contrary the South India is near to sea shore with hot climate; hence the skin colour of South Indians is black. It is not a racial character.

The Vedic metaphor used for the dichotomy is due to the biased political interpretation of war between Indra and Black demons. The Indra is term for electricity and Demons means obstacle.

The Sun spots on the surface of the sun are without projection.

They have been describes as nose less black demons, who check the luminosity of the sun. The sun spots have been destroyed by the Indra; electric current with formation of the electromagnetic energy and magnetic storms.

Age of the Veda

As regard the age of the Veda and Vedic culture is there, it regarded that Vedic hymns were formulated around 2000 to 4000 years B.C., but Archaeologist, Historians and Astronomers have different views regarding the age of Vedic hymns and they have no consensus over it. Looking to the depth of the Vedic knowledge in the light of modern science, it seems that the Vedic culture may have flourished on the earth before the ice age and Green house Effect and consequent Global warming had forced them to compile their knowledge in Vedic hymns. As per the Hamburg Institute of Meteorology of Max Planck Society, Germany under a project on **Climap** has reported that identical to today's ṢGreen house Effect¿ and consequent Global warming had occurred about 18000 years ago and a consequent ice age was there and North America, Europe and Siberia were covered with thick snow cover in between Siberia and Alaska a Land bridge was formed through which people were migrated. (German News Sept. 89, Page 25).

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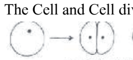
24. Appendix I

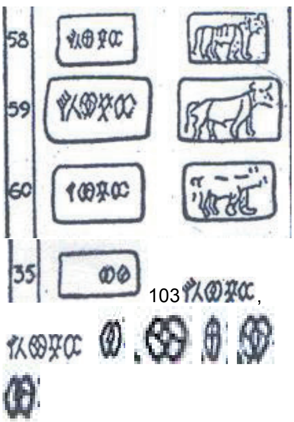
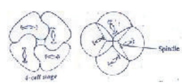
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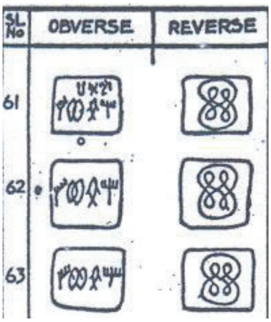
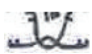
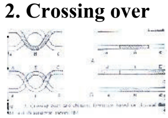
Identification of symbols

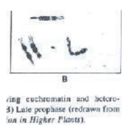
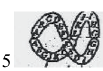
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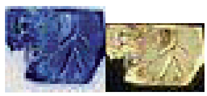
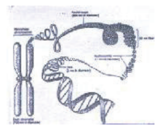
Table Identification of symbols

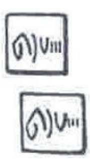
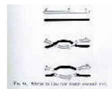
1. Coaservate   Demonstration of the a-biotic formation of organic substances in the early pre-biological history of the earth.	Oparin (1922), J.B.S. Haldane)28) and Bungen Burg de Jong)29), they have suggested that in : primitive conditions, coaservates y get produced, as and when two drophilic colloidal solutions rying opposite charges are being xed. A.I. Oparin (1968) has also suggested that photosynthetic activity can be promoted, when porphyrin is incorporated in the coaservate, Stanley Miller 1953 has demonstrated that under experimental conditions, the amino acids necessary for the building up of biological systems can be generated.	
2. The eukaryotic cell The Cell and Cell division  Cell & cell division 	**2. The eukaryotic cell** The Cell and Cell division 	

3. The stages in the cell division  **4. The Chromosome and cell division**	**3. The stages in the cell division**  **4 The Chromosome and cell division**	

1. Loop formation   **2. Crossing over**   crossing over tab. 9	1. Loop formation   **2. Crossing over** 	

3 Metaphase stage 	**3 Metaphase stage**  	
4 A chromosome euchromatin and heterochromatin A  b 	**4 A chromosome euchromatin an Heterochromatin**  	
5 chromosomal inversion 5 	**5. chromosomal inversion** 5 	

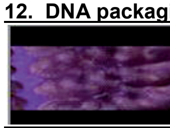
6. Chromosome at molecular level  6. the structure of chromosome thread at molecular level	**6. Chromosome at molecular level**  6. the structure of chromosome thread at molecular level	
5. late prophase 	**5. late prophase** 	
6. Crossing over  4. Meiotic crossing over	**6. Crossing over**  **4. Meiotic crossing over**	
7. Synapsis	**7. Synapsis**	

 **8. Recombinant DNA**  **9. Metaphase stage**  **10. Telophase stage**  **pairing of**	 **8. Recombinant DNA**  **9. Metaphase stage**  **10. Telophase stage**  **Pairing of chromosome**	

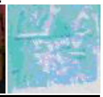
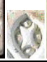
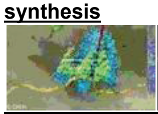
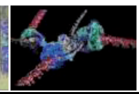
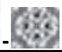
chromosome		

<table>
<tr>
<td><u>11. De oxy ribose Nucleic Acid – DNA</u>
 
Light of Life – the nucleotide pairs on the DNA showing the position of hydrogen Triple and double bond  
Complimentary base pairs</td>
<td><u>11. De oxy ribose Nucleic Acid – DNA</u>
</td>
<td></td>
</tr>
<tr>
<td><u>12. DNA packaging</u>

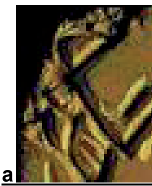
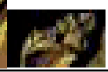
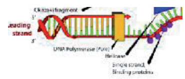


<u>13. Protein translation</u>
a </td>
<td><u>12. DNA packaging</u>


<u>13. Protein translation</u>
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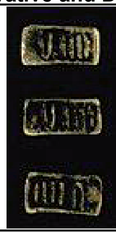
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<u>14. DNA copying and protein synthesis</u>
 
<u>15. x ray crystallography of Protein</u>
  
<u>16. DNA Repair Protein at Work</u>
 
</td>
<td>
<u>14. DNA copying and protein synthesis</u>
 
<u>15. x ray crystallography of Protein</u>
 - 
<u>The typical tetrameric structure of aqua glyceroporin</u>
<u>16. DNA Repair Protein at Work</u>

</td>
<td></td>
</tr>
</table>

17. DNA replication	**17. DNA replication**	
a  b  **17 a DNA replication, b Insertion of gene** **18. Ribose Nucleic Acid RNA**   **The ribosome translates the DNA code into life** **19. DNA replication**		

<table>
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Conservative, semi conservative and Dispersive models



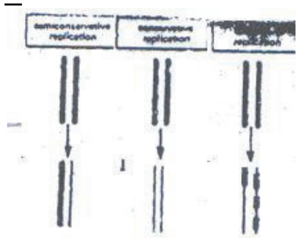
20. The Nuclear Reaction



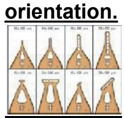
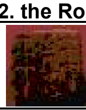


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19. DNA replication Conservative, semi conservative and Dispersive models



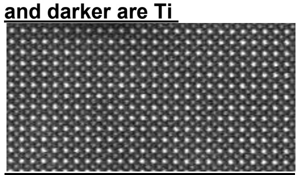
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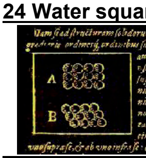
21. micro Loops   c  micro Loops 3 	21. micro Loops Micro Loops E™ are precision attached to bevelled, solid, nonmagnetic stainless steel rods with standard lengths of 11, 19 and 25 mm and SPINE length. They can be cut to other lengths using spring steel compatible cutters. Rods can be easily bent using needle nose pliers to place the crystal in a desired orientation. 	
22. the Robot  	22. the Robot The Scripps Institute's Williams was sometimes able to work by remote control from La Jolla using the advanced automation at the SIBYLS end station, whose robots and software can load samples, track ongoing experiments in real time, and collect data.	

<table>
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<td>
23. Atomic resolution images
Crystalline solid atomic image of Strontium titanate the brighter atoms are Sr

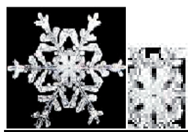
and darker are Ti,

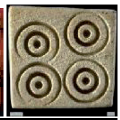

24 Water square molecule
 d 
B Water square molecule
</td>
<td>
23. Atomic resolution images

Crystalline solid atomic image of Strontium titanate The brighter atoms are Sr and darker are Ti

A

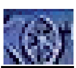
24 Water square molecule


B Water square molecule
</td>
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</table>

25. The tetrahedral arrangement of hydrogen bonds  **C As shown by X-ray crystallography, the hexagonal symmetry of snowflakes results from the tetrahedral arrangement of hydrogen bonds about each water molecule.** **26. X Ray studies of Nucleic Acid** **X-ray crystallography was the means to discover the molecular structure of DNA 1952, Rosalind Franklin, produces an x-ray photograph of DNA that**	**25. The tetrahedral arrangement of hydrogen bonds**  **C Drawing of square (Figure A, above) and hexagonal (Figure B, below) packing from Kepler's work, Strena seu de Nive Sexangula.** **As shown by X-ray crystallography, the hexagonal symmetry of snowflakes results from the tetrahedral arrangement of hydrogen bonds about each water molecule.** **26. X Ray studies of Nucleic Acid** **D I, II. Astbury's images, from "X-Ray Studies of Nucleic Acids," 1947**	

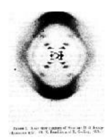
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<td>proves it has a double helical structure.
D Astbury’s image from x ray studies of Nucleic Acids on seal
 
steatite button seal


Asbury’s image of DNA

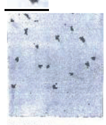

X ray image of DNA

Crystallography image - the A and B forms of the DNA
 
B DNA, the figure on the</td>
<td>I  II 

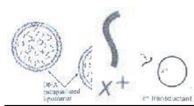
 Astbury’s image of DNA


Franklin’s image

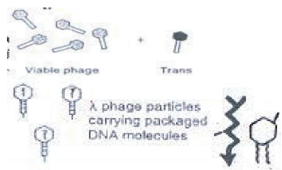
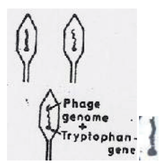
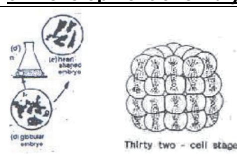
Crystallography image - the A and B forms of the DNA Franklin has reported that DNA existed in two forms. These forms are the dehydrated is a form and the fibrous structure due to humid condition is B form.</td>
<td></td>
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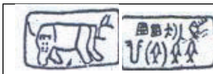
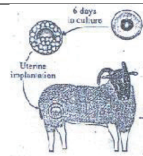
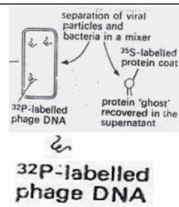
seal **The seal symbol shows the x ray Crystallography image of the DNA, along with the infection of tryptophan gene to obtain phage genome.**  **the two forms of DNAa**  	**The A and B forms were then separated and subjected to X-ray crystallography obtaining the pictures, which would be the basis of Watson and Crick's helical DNA structure; one of them the famous photo of the B**  **DNA 4 a. crystallography image of a form (the same seal with different colour) 4 b modern model of A form of DNA**	
27. Satellite DNA    **Satellite DNA**	**27. Satellite DNA**  	

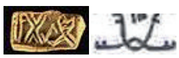
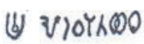
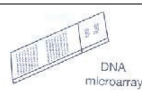
<table>
<tr>
<td><u>28. cDNA</u>

<u>c DNA</u></td>
<td><u>28. cDNA</u>


<u>c DNA</u></td>
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</tr>
</table>

29. Micro bodies of Nucleic Acid	**29. Micro bodies of Nucleic Acid**	
  The components of Nucleic Acid and micro bodies **30 Tryptophan gene**  18 Tryptophan gene **phage DNA** **31.Development of embryo**	 **30. Tryptophan gene**  **31.Development of embryo**	
 19 Development of heart shaped and globular embryo, 80	 **32. Implantation of gene**	
32. Implantation of gene		

 **20 implantation of gene in the ovary** **<u>33. 32 P-labelled phage DNA</u>**	 **<u>33. 32 P-labelled phage DNA</u>**	
 21 32 P-labelled phage DNA		

34. Protein body  **35. crossing over**  **36. DNA micro array**	**34. Protein body**  **35. crossing over**  **36. DNA micro array**	
1,  **37. Plasmid DNA**  25  34 Excess plasmid DNA & Plasmid **38. Monoclonal anti body** **31 Monoclonal anti body** 	 **37. Plasmid DNA**  **38. Monoclonal anti body** 	

Appendix I I

FIND-SPOT AND OTHER AVAILABLE DETAIL
COPPER TABLETS FROM MOHENJO-DARO

Serial No. (vide Figs. LI & LII	Find Spot/Level	Published Reference Reg.No.and Size
1	DK Area G Section Bl. 2, ho. II, rm. 24 LOWER LEVELS Level ṣ 5.03 m	Mackay, CIII, 7; p; 368 DK 4294 22.5 x 22.5x 0.3mm
2	DK Area G Section Bl. 1, ho. I, rm. 18 UPPER LEVELS Level ṣ 1.68m	Mackay, XCIII, 13; p. 3656
3	DK Area G Section Bl. 2, ho. IV, Court 15 UPPER LEVELS	Mackay, XCIII, 2; p. 364 DK 4346 33 x13.3 x1.25mm
4	DK Area G Section Bl. 1 (Palace)	Mackay, XCIII, 7; p. 365 DK 4532 37.5x20x2.5mm

	Court III (2)	
	UPPER LEVELS	
5	Not available	DK 3694
		NM*
6	Not available	S 65 NK
7	Not available	DK 3931
		SC, 63-10/254
8	DKArea	Mackay, XCIII, 8; p. 365
	G Section	DK 4209
	Bl. 6, ho. III, rm. 41	34.3 x 23.8x1.8mm
	UPPER LEVELS	
	Level ṣ 3.02 m	
9	Not available	DK 3532
		SC, 63-10/268
10	Not available	DK 4209
		Mackay, XCIII, 8
11	Not available	DK 10142
		SC, 63-10/290
12	DK Area	Mackay, X CIII, 6; p. 365
	G Section	DK 3692
	Bl. 6, ho. II, rm. 10	22.5 x 22.5 x 3.3mm
	UPPER LEVELS	
	Level ṣ 3.05m	
13	DK Area	Mackay, XCIII, 5; p. 365
	G Section	DK 4143

	Bl. 6, ho. II, rm. 7	23x22x4mm
	UPPER LEVELS	
	Level-3.57m	
14	DK Area	Mackay, XCIII, 12; p. 366
	G Section	DK 3817
	Bl. 6, ho. III, rm. 16	23 x 23 x 4.5mm
	UPPER LKEVELS	
	Level- 2.23 m	
15	Not available	DK 10695
		SC, 63-10/265
16	Not available	DK 9015
		SC, 63-10/265
17	DK Area	Mackay, CIII, 1; p. 3657
	G Section	DK 5444
	Bl. 1 (Palace)	35.3x25.4x1.8mm
	SW Wing (II)	
	Rm. 6	
	LOWER LEVELS	
	Level ṣ 5.08 m	
18	DKArea	Mackay, XCIII, 9; p. 367
	G Section	DK 3447
	Bl. 9, ho. VII, rm. 18	34.5 x 34.5 x 2.25mm
	UPPER LEVELS	
	Level ṣ 0.85m	
19	Not available	DK 715

		SC, 63-10/248
20	Not available	DK 10146
		SC, 63-10/288
21	Not available	DK 10175
		SC, 63-10/272
23	Not available	DK 34
		SC 63-10/267
24	Not available	DK 768
		SC 63-10/251
25	Not available	DK 12001
		SC 63-10/266
26	Not available	DK 10141
		SC 63-10/283
27	Not available	DK 1025/55
		NM
		DK 1347/58
28	Not available	NM
		DK 1378
		Hunter, III, 42
		SC 63-10/255
29	DK Area	Mackay, XCIII, 3; p. 364
	G Section	DK 3850
	Bl., 6, ho. II, rm. 11	33 x13.3 x1.3mm
	UPPER LEVELS	
	Level - 3.05 m	

30	Not available	DK 3447
		SC, 63-10/247
31	DK Area	Mackay, XCIII, 14; p. 366
	G Section	DK 4807
	Bl. 10, ho. I rm. 13	33.8 x 25.8x1.8mm
	UPPER LEVELS	
	- 2.59M	
32	Not available	DK 489/60 NM
33	DK Area	Marshall, Vol. II; pp. 399-400
	Trial Trench E	E 2215
	- 0.91m	
34	Not available	E 825
		SC, 63-10/254
35	Not available	DK 1994
		Huntger, III, 37
36	DKArea	Mackay, CIII, 4; 367
	G Section	DK 5421
	Between Bls. 1 (Palace)	36.3x13.8x3.3mm
	And 2 (III), rm. 17	
	LOWER LEVELS	
	- 4.39 M	
37	Not available	DK 552/76
		NM
38	Not available	DK 11307
		SC, 63-10/262

39	DK Area G Section Bl. 1, ho. VIII, rm. 63 - 5.73m	Mackay, CIII, 3; p. 3657 DK 5996 36.3 x 25.5x1.8mm
40	Not available	DK 1838/56 NM
41	Not available	DKC 153/61 NM
42	Not available	B-103 SC, 63-10/304
43	Not available	DK 3169 SC, 63-10/309
44	Not available	E2. 1164 NM
45	Not available	DK 11146 SC, 63-10/246
46	Not available	E 1092 SC, 63-10/303
47	Not available	DK 9152 SC, 63-10/265
48	Not available	E 814 SC, 63-10/287
49	Not available	C 2248 SC, 63-10/287
50	DK Area	Marshall, CXVII, 5; p. 399

	G Section	DK 1606
	Bl. 1, - 1.83 m.	
51	Not available	DK 12514
		SC, 63-10/278
52	Not available	DK 151
		SC, 63-10/308
53	Not available	DK 3384
		SC, 63-10/261
54	Not available	DK 7841
		SC, 63-10/243
55	Not available	DK 5444
		SC, 63-10/259
56	Not available	DK 10045
		SC, 63-10/249
57	Not available	DK 10121
		SC, 63-10/285
58	DK Area	Mackay, XCIII, 10; p. 366
	G Section	DK 3811
	Bl. 9, ho. VI, rm. 31	31.3 x 22.5 x3.8mm
	UPPER LEVELS	
	- 2.10m	
59.	Not available	DK 4225
		SC, 63-10/246
60	Not available	DK 7874
		SC, 63-10/274

61	DK Area	Mackay, XCIII, 4; p. 364
	G Section	DK 3696
	First Street (11)	27x28x3m
	UPPER LEVELS	
	Level- 2.44 m	
62	Not available	DK 4927
		NM
63	Not available	DK 7489
		NM
64	Not available	DK 501/40
		NM
65	DK Area	Mackay, XCIII, 11; p. 366
	G Section	DK 4672
	Bl. 9, ho. Vii, rm. 51	36.3x23.3x2 mm
	UPPER LEVELS	
	Level- 1.43 m	
66	DK Area	Mackay, XCIII, 1; p. 364
	G Section	DK 3697
	Bl. 2, ho. IV Court 15	32.8x15.5x2.8 mm
	UPPER LEVELS	
	Level- 1.88 m	
67	Not available	DK 726
		SC, 63-10/236
68	DKArea	Mackay, CIII, 5; p. 367
	G Section	DK 8108

	First Street (21)	21.5x25x5.8 mm
	LOWER LEVELS	
	-4.51M	
69	DK Area	Mackay, CIII, 2; p. 367
	G Section	DK 4235
	First Street (1)	36.3x24.3x24.3mm
	LOWER LEVELS	
	-4.48M	
70	Not available	DK 3577/48
		NM
71	Not available	DK 10596
		SC, 63-10/306
72	DK Area	Mackay, CIII, 6; p. 367
	G Section	DK 4157
	First Street (2)	28.5x22.5x22.5
	LOWER LEVELS	
	Level- 4.48m	
Not	DK Area	Mackay, CIII, 12; p. 368
Included	G Section	DK 5796
	Bl. 1a, rm. 58	
	LOWER LEVELS	
	Level- 5.58 m	
73	Not available	DK 10707
		SC, 63.10/268
74	Not available	DK 4069

		SC, 63.10/270
75	Not available	DK 4067
		SC, 63.10/271
76	Not available	DK 5767
		SC, 63.10/276
77	Not available	VS 702
		Marshall, CXVII(, 15
78	Not available	VS 192
		Hunter, III, 24
79	Not available	VS 3500
		Marshall, CXII, 7
		Hunter, III, 30
80	Not available	VS 2590
		Hunter, III, 31
		SC, 63-10/282
81	VS Area	VS 1988
	House XVI	Marshall, CXVII, 8; p. 400
	Rm. 107	Hunter, III, 27
83	Not available	VS 6058
		SC, 63-10/242
84	VS Area	VS 2028
	House XXVI	Marshall, CXVII, 11; p. 400
	0-304 m	
85	Not available	VS 888
		Hunter, III, 34

86	Not available	Hunter, III, 35
87	Not available	VS 2613
		Marshall, CXVII, 1
		Hunter, III, 32
88	Not available	VS 2360
		Hunter, II, 39
89	Not available	VS 9823
		Marshall, CXVII, 3
		Hunter, III, 40
90	Not available	VS 1406
		Marshall, CXVII, 16
		ARASI- 1925-36,
		Xlvi, 7
91	VS Area	VS 3526
	House 1,	Marshall, CXVIII, 5; p. 400
	Rm. 30	
92	Not available	VS 2109
		Marshall, CXVIII, 6
		Hunter, III, 45
93	Not available	VS 2432
		Hunter, IV, 54
94	Not available	VS 3590
		Marshall, CXII, 2
95	Not available	VS 1104
		Hunter, III, 52

SC, 63-10/241

The seals and tablets

Figure - I- Reverse

Terracotta tablet Harappa H 95- 2523

A square moulded tablet from Harappa, a unicorn on one side

Material: terracotta

Dimensions: 2.0 X 4.89 cm. 0.51 cm thickness

Harappa. Lot 5719-02

Harappa Museum. H95-2485

Meadow and Kenoyer 1997

Figure - III a deity under pipal arch on the reverse

Material: terracotta

Dimensions: 2.0 X 4.89 cm. 0.51 cm thickness

Harappa. Lot 5719-02

Harappa Museum, H95-2485

Meadow and Kenoyer 1997

Figure - IV a

Material: Unfired grey steatite

Dimensions: 1.93 X 1.97 cm. 0.55 to 0.63 cm. thickness

Mohenjo - daro, D392

National Museum, Karachi, 50.282

Marshall 1931: 387-8 pl. CXI. 353

Origin of life

Cat. No. 19

Square seal with antelope motif and two signs of script

The forward - arching horns indicates two strips of DNA.

Square seal, material fired white hardened steatite, dimensions 2.3 X 2.3 cm. 1.27 cm. thickness,

Chanhudaro 1269

Museum of fine arts; Boston, MFA 36.971

Mackay 1943: Pl. LI. 21

Joint expedition of the American School of Indic and Iranian Studies and the museum of fine arts 1935 - 1936 © 1997 Museum of Fine arts, Boston

Material: terra cotta

Dimensions: 3.91 lengths, 1.5 to 1.62 cm width

Harappa, Lot 4651-01

Harappa Museum, H95-2486

Meadow and Kenoyer 1997

90 Moulded tablet

Material: terra cotta

Dimensions: 3.91 lengths, 1.5 to 1.62 cm width

Harappa, Lot 4651-01

Meadow and Kenoyer 1997

Terracotta sealing from Mohenjo-daro depicting a collection of animals

ESSAY SLIDE INDEX HOME

HARAPPA 1996

Seal, Mohenjo-daro.

Material: tan steatite

Dimensions: 2.65 x 2.7 cm, 0.83 to 0.86 thickness

Mohenjo-daro, DK 12050

Islamabad Museum, NMP 50.296

Mackay 1938: 335, pl. LXXXVII, 222

Pasupat mudra, from **Cultural heritage of India**

Bull seal, Harappa.

Harappa Archaeological Research Project

from Cultural heritage of India

Material recovered from Mohenjo - daro in the first seasons of excavations by Sir John Marshall

Cultural heritage of India

Unicorn Seal, Mohenjo-daro.

Material: white fired glazed steatite

Dimensions: 5.08 x 5.08 cm

Mohenjo-daro, HR 743

National Museum, Karachi, NMP 50.192

Cultural heritage of India

Material recovered from Mohenjo - daro in the first seasons of excavations by Sir John Marshall

Mohenjo-daro.

Material: grey brown steatite

Dimensions: 2.4 x 2.4 cm, 0.53 cm thickness

Mohenjo-daro, DK 7734

Islamabad Museum, NMP 50.289

28. Bison seal, Mohenjo-daro.

Material: grey brown unfired steatite

Dimensions: 2.04 x 2.04 cm, 0.74 cm thickness

Mohenjo-daro, HR 4503

Mohenjo-daro Museum, 50.258, MM 487

Marshall 1931: pl. CX, 311

34. Seal, Mohenjo-daro

Material: fired tan steatite with traces of glaze

Dimensions: 4.06 x 3.95 cm, 0.8 cm thickness.

Mohenjo-daro DK 6847

Islamabad Museum, NMP 50.295

Mackay 1938: pl. XCIV, 430; pl. XCIX, 686a.

Figure Material recovered from Mohenjo - daro in the first seasons of excavations by Sir John Marshall

Figure **29 inscribed objects.**

Harappa Archaeological Research Project

Essay slide index home, Harappa 1996

-cat. no. 17 Seal with Water buffalo

Material steatite unfired grey steatite

Dimension: 2.79 x 2.79 cm. 0.5 cm. thickness

Mohenjo-daro. SD 2697

Mohenjo-daro, Museum. Karachi .MM 50. 279

Mackay 1938: 330. Pl. LXXXII. 696

37 Seals, Mohenjo - daro, Essay slide index home, Harappa 1996

Figure collection of seals 29 inscribed objects. Harappa Archaeological Research Project

Essay slide index home, Harappa 1996

Figure XLVII 31. Seals and sealing.

Material: fired white glazed steatite

Dimensions: circa 3.74 cm length, 1.47 cm wide

Mohenjo-daro, DK 5567

National Museum, Karachi, NMP 50.315

Shah and Parpola 1991: M-1271

Essay slide index home, Harappa 1996

Figure XLVIII

30. Seals & tablets.

Harappa Archaeological Research Project

Essay slide index home, Harappa 1996

Figure - Genetical micro bodies used in biotechnology

Figure Biotechnological models on the Seals and tablets.

Figure Inscribed copper tablets 1 to 60

Figure LII Inscribed copper tablets 61 to 123

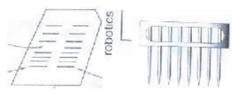
Archaeological Survey of India

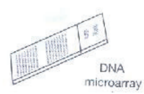
XXXX

Appendix III

Key for Identification of Symbols

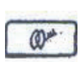
For comparison of the Indus valley symbols, the modern symbols have been given in the front for convenience.

 1,  

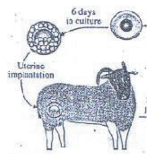
 

1. The tablets showing symbolic separation and

Identification of genetic material.

2.  6. 

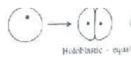
The tablets showing insertion of gene in ovary.

The tablets showing implantation of gene in the womb

3.  The arrow indicate removal of the gene

4.  70. Association of a gene and protein

5.  First radial division of embryo 

6.  80. Chromosome Bridge 

7.  73. Pairing of chromosome

8.  80, Development of heart shaped and globular embryo, 80 

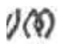
9.  12. Sperm

10.  14, Oogonium.

11.  15 insertion of foreign gene in ovary

12.  31 Monoclonal anti body

13.  34, Excess plasmid DNA & Plasmid 72 

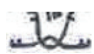
14  34, Excess plasmid DNA and empty protein body

15.  28 E 17. Excess plasmid DNA & c DNA



16.  28 cell division and DNA replication

17.  28 - Metaphase chromosome (11. Prophase 2nd, Metaphase stage 34 reverse)

18.  9- Showing crossing over.

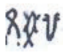
19.  10. Injection of foreign gene

20.  13. Showing triploid gamete

21.  12. Gametes, in Telophase stage of meiosis

23.  74. Injection of genes in the embryo

24.  74. Embryo

25.  75.

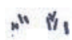
26.  75. Radial division of embryo

27.  117. Phage DNA and Monoclonal anti body

28.  118. Association of phage DNA and Monoclonal anti body

29.  95. Satellite DNA

30.  108. Protein body 

31.  76. Pairing of chromosomes and identification of the genomic sequence has been shown on reverse of the tablet, it is just like autoradiograph.

32. *Sinīvālī* - DNA De oxy ribose Nucleic Acid

 *Sinīvālī* -DNA

32  Ribbon like RNA.

33.  Heterologous chromosome pair.

 Modified pair of two different genomic chromosomes

34.  A model of DNA

35.  DNA repair

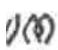
36.  chromoso me aberration

37.  Tryptophan gene

Phage DNA  

38.  31 Monoclonal anti body

39.  34 Excess plasmid DNA & Plasmid

40.  34 Excess plasmid DNA and protein body

41.  28 - Excess plasmid DNA and c DNA (foreign gene)

42.  Cell division

43.  chromosome bridge

44.  gametes

45.  fertilization

46.  Protein body

47.  sperm

48.  gametes in the womb

49.  DNA model

50.  life cycle

51.  crossing over

52.  crossing over

53.  Insertion of gene during cell division

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Appendix-IV

Scientific Index to the Vedic Deities

Aja	-	Unborn, Aja
Ajā	-	goat, goat as metaphor for the Ṛbhu-cell body In the creation sacrifice
Apah	-	Water
Apām napāt	-	Son's of water- steam
Apsara	-	Chemical reaction, which are going on in a Cyclic manner
Avi	-	Protector of plant, sheep
Aditi	-	Infinite nature, micro nature (The name cow is
Arya	-	Well cultured
Aśvin	-	Morning and evening, they represent a pair, union of two, they are twin sons of Vivasvat-nucleotide pair, represents rising and setting of Sun
Aśva	-	Horse:-a form of rapidly moving energy.
Aśvattha	-	Ficus religiosa, pipal
Audumbara	-	Ficus glumerata - fig
Aryaman	-	A ray of Sun., long red wave length of light
Āditya	-	Twelve Āditya (twelve months)

Agni	-	Fire, energy
Avi	-	Plant protector – Chlorophyll.
Bhag	-	Amsa, a portion
Bhṛgu	-	Shining, chlorophyll
Chamsam	-	Chalice, cup-cell, Parnā Maṇi, Chlorophyll
Cow	-	Symbol of nourishment and feeding just like Mother
Cow omni form	-	DNA
Cow of every hue	-	living beings
Crippled cow	-	Carbon di oxide
Milk cow	-	Infinite nature
White cow	-	Visible light
Dakṣa	-	Condensed form of energy, which has produced nebula
Darbha	-	Grass
Dadhikras	-	Life energy
Dadhikravān	-	Dwelling place of life energy-human body
Dhenu	-	Cow, metaphor for nourishment as milk food
Daśagva	-	Ten, ten rays
Deva	-	Fundamental particles, God
Devatā	-	Natural forces
Dharma	-	Work, Duty, Cosmic principle
Eagle	-	Sun rays

Ghṛt-butter - Condensed form of energy

Ghṛta praṣṭha - Condensed energy in organic matter

Gandharva - Water nymph, protoplasm

Gladdening Drop - Life energy

Gāyatrī - Three bands of fundamental particles

Suparṇa - Brilliant lustre of sun rays (sun bird)

Gāyatrī - Three bands of fundamental particles.
(Electron, proton, neutron, energy)

Havi - Stimulator, Indra Bolt of Indra,
The electrical charge, Indra Electricity -
two steeds-two charges

Ida-Ila - Nourishment

Kutsa - Sun spots.

Mahi-Bharti - The great earth

Mārtanda - Earth, Āditya

Maruts - Storm. Thunder

Mātariśvan - CO_2 Carbon di oxide.(crippled cow)

Mitra - Light, Friend

Mother - Symbol of progeny and nourishment.

Nave - Centre

Navagva - Nine, The nine doors of the human body

Nigrodh - Ficus bengalensis- banyan

Nila-lohita - Blue and red rays of sun

Narāśams	-	A particular ray of Sun., short blue wave length of light
Pūṣan	-	solar rays
Piśaṅga	-	Toxic rays
Parjanya	-	Rain clouds, due to the nourishing capacity of rains, they have been called as cow and the rain Water as milk
Prajāpati	-	Lord of beings (fundamental energy)
Puruṣa	-	Symbolic imagination of fundamental, energy
PañcaJana	-	Five types of living-beings
Pegs	-	Cycles
Piśāca	-	Rakshas: - flesh eater microbes
Parṅa maṇi	-	Chlorophyll
Pavamān	-	O_2 oxygen
Purohita	-	Priest
Ṛta	-	Cosmic principle
Sūrya	-	Sun
Sarasvatī	-	Vac, speech, a river
Samidha	-	Fuel
Sādhya	-	Material
Savitā	-	Stimulator
Soma	-	Magnetic energy, forces and formation of bond energy, drinking of soma: - association of

		magnetic energy with others, such as: - Indra & Soma - electromagnetic energy
Sinīvālī	-	Duplicating DNA, Which initiate language Code in DNA
Svarbhānu	-	Eclipse of sun - Rahu.
Varuṇa Soma	-	The magnetic energy of the atoms, molecules and substances
Rudra Agni	-	Energy in the gaseous air
Seven Āditya	-	Seven sons of Aditi ṣ seven planets
Savitā	-	Stimulator
Somagopa	-	Guardian of soma, soma is also a name of a plant as well as moon due to the presence of magnetic energy (soma)
Sudhanva	-	Son of Sudhanvan, developing cell, Ṛbhu.
Śudra	-	Without knowledge
Trita	-	Three, triple bond, H3 who prepare soma
Triśira	-	Triplet code
Tvaṣṭā	-	DNA
Ten fingers	-	Ten, ten rays
Tanunapata	-	Solar flares
Uṣa	-	Dawn
Vajā	-	Younger, (vigorous one)
Vājinah	-	Steed, war horse

Vaivasvat - Son of vivasvat (DNA)

Veda - Knowledge

Vibhvan - Eminent

Vivasvat - Vivasvat's son manu called as vaivasvat or yama-yamī, DNA

Viśvarupa - Son of Tvaṣṭā, who is responsible for various forms of living beings

Varuṇa - Gravity, gravitational force, as soon as atoms and molecules are get formed they have their existence the same has been described as Varuṇa who is the lord of water means the water molecules are having the cohesive force

Vachaspati - Lord of speech

Viṣṇu - Course of solar rays from sky, heaven and atmosphere, its two steps are visible but its one step is invisible means absorption of ultraviolet rays in the upper atmosphere by ozone layer, Which is its invisible step

Viśvakarma - Creator, carpenter (fundamental Energy)

Wheel - Cycle, chakra

Yajña - Sacrifice, actions and interactions

Yajña vedi - Place of reaction

Yama - Chromosome, with information of life and

		Death
Yama-Yamī	-	the twin brother and sister, they represent a pair of chromosomes
Yuj	-	To connect

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